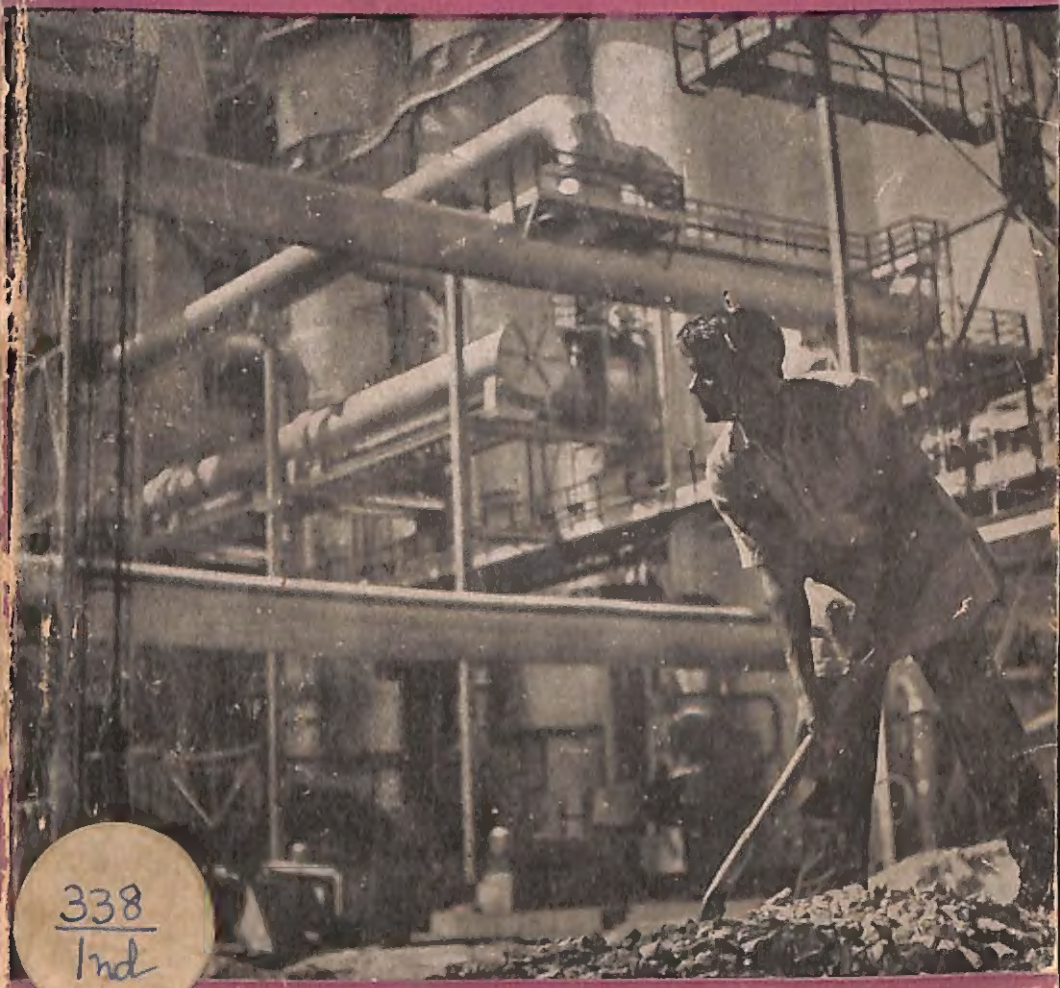
INDUSTRIAL DEVELOPMENT OF INDIA



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CHAPTER I

THE BACKGROUND

Long before the Industrial Revolution in the West, India was reputed for her industry and commerce. Manufacturing in those days was, naturally, carried on in small-scale units but the quality of products was high. Indian textiles, metalware and wood and ivory carvings, produced by highly skilled craftsmen, were famous and in demand throughout the world.

With the coming of British rule these flourishing industries suffered a quick decline. In the interests of their home industry and trade, which were expanding in the wake of the Industrial Revolution, the British Government introduced policies which tended to cripple Indian manufacturing potential. Simultaneously, cheap machine-made British goods flooded the Indian market. Thus, in the crucial period when free nations were racing forward to industrial progress, our country was helplessly slipping back. As a result of this, it was rapidly reduced to the position of subserving the industrial economy of Britain as a mere supplier of raw materials.

The gradual conquest of the sub-continent by the British, and the administrative unity which was its by-product, gave rise slowly to new currents of economic as well as political thought. Towards the middle of the 19th century attempts were made to break the spell of stagnancy and make a fresh start. The earliest industries set up on an organised basis were jute and cotton textiles (although the jute industry, in particular, was established chiefly with foreign capital). Among the important factors that facilitated the growth of these industries were natural advantages which the country possessed in the form of cheap raw materials, abundant labour, large market, etc. Small beginnings were made in coal mining also, which received impetus with the intro-

duction of railways. For over half a century progress was confined only to these fields.

It was in 1907 that pioneering efforts made by Jamshedji Tata for developing an iron and steel industry in this country were crowned with success with the establishment of the Tata Iron and Steel Works, in the face of serious odds and doubts. While his was a remarkable step forward, it was insufficient for India's needs.

The World War of 1914-18, which cut off foreign supplies, helped Indian industry to consolidate its position and make some further progress. After 1922 limited protection was granted to a few industries which enabled them to grow and withstand foreign competition. Among the more important in the group were steel ingots, cotton piecegoods, sugar, matches and paper.

Between 1922 and 1939, the production of cotton piecegoods in the country increased 2½ times, of steel ingots eight times and of paper 2½ times. As for sugar, within four years from 1932, the country became able to produce its entire requirement.

Intermediate producer goods industries like cement, non-ferrous metals, chemicals and power alcohol were also established in the inter-War period and they recorded sizeable growth. For example, by 1935-36, 95 per cent of the cement consumed was produced within the country. Compared to many Asian countries, the productive capacity of these industries was large. But, in most cases, it was inadequate to meet even domestic demand.

The Second World War created an unprecedented demand for goods required both for civilian consumption and defence needs. In addition, normal sources of supply were cut off. Profiting from this situation, a number of new industries were established and the industrial structure began to be diversified. These new industries included both consumer and producer goods industries like bicycles, sewing machines, radios, industrial chemicals, ferro-alloys, non-ferrous metals, certain types of machine tools and simple machinery. The War also gave impetus to some small-scale and medium-scale industries such as light engineering products, pharmaceuticals and drugs.

Most of the established industries utilized their capacity to the full during the War period by multiple shifts which increased the wear and tear of equipment. At the same time, it became almost impossible to replace worn-out machinery.

Several of these industries had been hurriedly set up and suffered from many defects such as obsolete machinery, ill-trained labour or inexperienced management. While these defects did not matter in the boom conditions of the War, they became very real handicaps with the cessation of War. The partition of the country in 1947 aggravated the problems further. One of the most serious problems needing urgent attention was the shortage of raw materials. The jute and cotton textile industries, in particular, suffered from the shortages as the main supplying areas went to Pakistan. Inadequate steel production in the country and the high price of imported steel affected some other industries which used steel as raw material. Yet another problem was the small and uneconomical size of a number of units in several industries where a larger size would have been more economical. Related to this was the problem of modernization of plant and equipment set up in the past. But no appreciable progress could be made for some time. Conditions in general were largely unsettled during those years.

At the time India became independent, the state of industrialisation broadly was that many consumer goods industries were in existence in the country and the output of most was, on the whole, sufficient to meet the domestic demand which was at a low level. But capital goods industries and industries manufacturing intermediate products had made only a meagre start. Their capacity was not enough to meet the requirements of the country. Nor were they sound enough to hold on during normal competitive conditions. In some basic industries, such as fertilizers, heavy engineering and heavy electrical equipment, even a start had not been made on any appreciable scale.

The relative backwardness of industrial development may be judged from the fact that in 1948-49 factory establishments accounted for only 6.3 per cent of India's total national income. The total labour force engaged in such establishments was about

3.1 million or 2.2 per cent of the working population in the country. While the aggregate industrial output appeared to be large, per capita output was very low as compared to that of advanced countries.

The industrial policy announced by the national Government in April 1948 emphasised the importance to the economy of securing a continuous increase in production. It also pointed out that the state must play a progressively active role in the development of industries and demarcated the spheres for the public and private sectors.

Systematic efforts towards greater industrialisation in the country started with the First Five Year Plan in 1951. But the state could take only a limited share in industrial development. The First Plan was meant mainly to reduce scarcity of food grains and other basic supplies. It was also designed to relieve the difficulties of transport as the War had told heavily on the railways. The major part of investment and effort was, therefore, directed to these fields.

A good base, however, was laid during the First Plan for the more intensive effort at industrialisation which was to come subsequently. Meanwhile, many important changes took place in the social, political and economic life of the country. One of the most important of these was that Parliament accepted the socialist pattern of society as the national objective. Against the background of these changes, as well as in the interests of rapid development, a new Industrial Policy Resolution was set out at the beginning of the Second Plan in April 1956. The new Resolution widened the sphere of state activities in the industrial field. It was within the framework of this Resolution that the rapid industrialization programme of the Second Plan was carried through.

The results of the first two plans (1951-61) were very encouraging. Judged from the Index of Industrial Production with 1956 as base, between 1951 and 1956, an increase of 37 per cent had been recorded in industrial output. During the Second Plan, an increase of 39 per cent was registered. In 1964

the Index stood at around 175, which shows an overall increase of 139 per cent between 1951 and 1964.

It may be mentioned that because of the method of compilation of index number (which gives a heavy weightage to traditional industries such as textiles, where only marginal increases have been possible), even this marked increase in the general index does not bring out sufficiently the progress recorded individually by a number of new industries. For example, production in the machine-building industry witnessed a phenomenal rise, the index (1956=100) moving up from 83 in 1955 to 237 in 1960 and further up to 269 in 1961. Similarly in the chemical industries, the index advanced from 96 in 1955 to 149 in 1960 and 174 in 1961. These figures indicate a striking increase as well as diversification in production.

This trend has continued even in the Third Plan, with a significantly larger growth of the producer and basic industries as compared to the general index of industrial production. Thus, for example, the index for basic metal industry advanced from 183 in 1960 to 261 in 1964 and for metal products from 106 to 226. The index for machinery and chemical products stood at 411 and 227 respectively in 1964. On the other hand, the increase in major consumer industries was much lower. The industries in which considerable increase in production was achieved are steel, aluminium, machine tools, electric transformers, fertilisers and caustic soda.

In the following pages, a brief account is given of the progress of industrial development in India so far and the prospects in the next few years. It will be seen that, in the short period after Independence, the country has attempted to create an industrial base for a dynamic change in the entire economy. In certain respects, what has been attempted and accomplished during the last seventeen years or so is more than the progress in the past century.

On the eve of Independence, the manufacturing sector was almost negligible in the country's economy. Today it is very significant, perhaps, next only to agriculture. New industries have grown up which supply new products or replace imported goods

wholly or partly. The total output of some of the new industries may as yet be comparatively small, but these advances will help in the process of expanding industrialisation to meet the country's growing requirements.

Another significant point about the industrial progress since Indepedence is that most of the operative, technical and managerial skill, and the bulk of raw material resources required for it, are forthcoming from within the country.

CHAPTER II

INDUSTRIAL POLICY

Industrial Policy Resolution, 1948

After Independence the Government decided to encourage the existing industries to step up their production, and to promote the establishment of new industries. The main aim was to strengthen the economy and to initiate institutional changes which would facilitate more rapid advance in the future. In order to achieve these objectives, a comprehensive statement of policy was necessary. Accordingly, the Government adopted the Industrial Policy Resolution in April 1948.

The Resolution emphasised clearly the responsibilities of Government in promoting, assisting and regulating the development of industry in the national interest. It laid down a certain demarcation of fields for the public and private sectors. For example, the Resolution reserved some industries exclusively for the Central Government. These were the manufacture of arms and ammunition, the production and control of atomic energy and the ownership and management of railway transport. In some other industries, such as coal, iron and steel, aircraft manufacture, ship-building, manufacture of telegraph, telephone and wireless apparatus and mineral oils, both Central and State Governments as well as other public authorities were to be responsible for further development. However, co-operation of private enterprise was to be enlisted where necessary.

The rest of the industrial field was left open to private and co-operative enterprise. But the state could intervene whenever the progress of any industry, under private enterprise, was unsatisfactory. Central regulation and control was envisaged for 18 specified industries, such as automobiles and tractors, machine tools, cement and air and sea transport, which were of special

importance from the viewpoints of investment and technical skill involved.

Industries (Development and Regulation) Act, 1951

To implement the industrial policy, the Government decided to acquire powers to regulate and develop industries along the prescribed lines. To this end, the Constitution was amended and the Industries (Development and Regulation) Act of 1951 was enacted.

Initially, the Act applied to 37 industries listed in the first schedule. These included fuel, machinery, electrical goods, electric energy, automobiles, telephones and telegraphs, arms and ammunition, agricultural implements and various other consumer, producer and capital goods industries. The Act was amended in 1953 to provide, among other things, for the addition of a few industries like silk, artificial silk, dyestuffs, soap, plywood and ferro-manganese to the list. It was again amended in 1956 to bring 34 more industries under the control of the Union Government. At present, 162 industries come within the scope of the Act.

Under the Act, all existing undertakings were required to be registered with the Government. Substantial extensions to the existing units, or the setting up of new units, could not be undertaken without licence from the Government. The Act authorised the Government to examine the working of any scheduled industry or undertaking in cases where there was a fall in the quantity or quality of its products or when there was an unjustified rise in their prices. If the undertaking continued to be mismanaged, and did not carry out the directions issued after an investigation, the Government was empowered to take over the management.

The Act also provided for the establishment of a Central Advisory Council of Industries, consisting of representatives of industry, labour, consumers and primary producers, to advise the Government on all matters concerning the development and regulation of industries. The Council was established in May 1952.

One of the main provisions of the Act was the setting up of development councils for individual industries. The councils would draw up plans for development, determine targets of production, promote improvement in efficiency and formulate measures for the maximum utilisation of the existing industrial capacity.

At present, 14 councils are functioning covering the following industries :

(i) Art silk, (ii) woollen, (iii) paper, pulp and allied industries, (iv) food processing, (v) oils, detergents and paints, (vi) sugar, (vii) organic chemicals, (viii) inorganic chemicals, (ix) machine tools, (x) non-ferrous metals and alloys, (xi) automobiles, automobile ancillary industries, transport vehicle industries, tractors and earthmoving equipment, (xii) drugs and pharmaceuticals, (xiii) heavy electricals, and (xiv) textile machinery.

Five councils, set up earlier, have since been abolished. These covered :

(i) glass and ceramics, (ii) leather and leather goods, (iii) instruments, bicycles and sewing machines, (iv) internal combustion engines, power driven pumps, etc., and (v) light electrical industries.

Besides, a number of panels and expert committees have been appointed to examine the policies and problems facing some industries which are not sufficiently developed or advanced to need a development council.

By exercising the powers under the Act, the Government aim at securing (i) a proper utilisation of the country's resources; (ii) a balanced development of large and small-scale industries; and (iii) a proper regional distribution of the various industries.

Industrial Policy Resolution, 1956

The 1948 Industrial Policy Resolution guided India's industrial development for eight years. These years witnessed many important changes and developments in the country. The Constitution of free India was adopted, guaranteeing certain funda-

mental rights and enunciating the Directive Principles of State Policy. Parliament adopted the socialist pattern of society as the objective of social and economic policy. The First Five Year Plan was completed, laying a new foundation for future growth and the Second Plan was formulated, with emphasis on industry. These developments necessitated a fresh statement of industrial policy, based on the principles laid down in the Constitution, the socialist pattern and the experience gained during these eight years.

In April 1956, the Government adopted the new Industrial Policy Resolution. It envisaged the enlargement of the public sector so as to include in it all industries of basic and strategic importance or in the nature of public utility services. Other industries, which were essential and required investment on a scale which the state alone could provide, had also to be in the public sector.

Three Categories

The new Resolution classified industries into three categories and defined the part the state was to play in each of them. In the first category were included 17 heavy, basic or strategic industries such as arms and ammunition, aircraft and railway transport, the future development of which was to be the exclusive responsibility of the state. The second category consisted of 12 industries such as machine tools, fertilisers and antibiotics which were to be progressively owned by the state. In order to accelerate their future development, the state was to establish new undertakings in those industries. At the same time, private enterprise was also expected to supplement the efforts of the state either on its own or with state participation. The third category included all the remaining industries. The future development of these was left to the initiative and enterprise of the private sector, although it was open to the state to enter any field, if necessary. It is necessary to emphasise that the three categories were not meant to be water-tight compartments. The public and private sectors were to work as complementary to each other. A good deal of flexibility was permitted

in practice. For instance, major expansions in steel were allowed in the private sector although steel was in Schedule A, reserved for the public sector.

Encouragement to Private Sector

The development of industries in the private sector was to be in accordance with the programmes formulated in successive Five Year Plans by ensuring the development of transport, power and other services and by appropriate fiscal and other measures. The state was to continue promoting institutions to provide financial aid to these industries.

Special assistance was to be given to enterprises organised on co-operative lines for industrial and agricultural purposes. But industrial undertakings in the private sector had necessarily to fit into the framework of the social and economic policy of the state. They were subject to control and regulation in terms of the Industries (Development and Regulation) Act and other relevant legislation.

Small-scale and Cottage Industries

The Resolution also stressed the role of cottage and village and small-scale industries in the development of the country's national economy. These industries offer some distinct advantages. For example, they provide immediate employment to a large number of people. At the same time, such industries generally ensure a more equitable distribution of the national income. They facilitate an effective mobilisation of resources of capital and skill which might otherwise remain unutilised. The aim of the state policy was to ensure that the decentralised sector acquired sufficient vitality to be self-supporting and its development was integrated with that of large-scale industry.

Regional Disparities

In order that industrialisation might benefit the economy of the country as a whole, the Resolution stressed that disparities in levels of development between different regions should be

progressively reduced. One of the aims of national planning, therefore, was to ensure that the various facilities, such as raw materials, power, water supply and transport, were steadily made available to areas that lagged behind industrially or where there was greater need for providing employment opportunities. Only by securing a balanced and co-ordinated development of industrial and agricultural economy in each region could the entire country attain higher standards of living.

Technical and Managerial Personnel

The Resolution recognised that such a programme of industrial development would require large numbers of technical and managerial personnel. Accordingly, managerial and technical cadres were to be established in the public services. Steps had also to be taken to meet shortages at supervisory levels, to organise apprenticeship schemes for training on a large scale, both in public and private enterprises, and to extend training facilities in business management in universities and other institutions.

Labour Association in Management

The new policy laid stress on the provision of proper amenities and incentives for all those engaged in industry. The living and working conditions of workers needed to be improved and their standard of efficiency raised. It was laid down that there should be joint consultation and workers and technicians should be associated progressively with management. Enterprises in the public sector had to set an example in this respect.

Decentralisation of Authority

Finally, the new policy emphasized that, with the growing participation of the state in industry and trade, the manner in which these activities should be conducted and managed assumed considerable importance. Speedy decisions and a willingness to assume responsibility were essential if these enterprises were to succeed. To achieve this objective, there was to be decentralisation of authority and management was to be along business lines.

Tariff Policy

Proper tariff policy plays a significant part in the industrial development of a country. When an industry is still in the stage of infancy, it needs to be protected from foreign competition. This is generally achieved by imposing protective duties on the imports of the goods the industry produces. The first steps to introduce protection as a means to promote industrialisation were taken in 1922 following the recommendations of the First Indian Fiscal Commission which favoured a policy of discriminating protection. A Tariff Board was constituted in 1945 to examine the claims for protection of industries, particularly those started during the War.

In April 1949, the Government set up a Second Fiscal Commission to investigate the working of Government's policy in regard to protection since 1922, to recommend the lines of future policy and the machinery required to implement it.

The Second Fiscal Commission laid down new principles to be followed in granting protection. One of its important recommendations was to set up a permanent statutory Tariff Commission. This was established in January 1952. The Commission is an autonomous body and enjoys a quasi-judicial status.

The main functions of the Tariff Commission are to examine the claims of Indian industries for protection and to review the progress of protected industries. It also recommends measures to deal with dumping and evolves safeguards against the abuse of protection by a protected industry. In addition, it investigates the effects of protection on the price level and cost of living and further suggests measures to correct any anomalies arising as a result of protection.

During the thirteen years of its existence, the Commission has held a large number of enquiries. On its recommendations, a number of industries, such as antimony, automobile sparking plugs, cotton textile machinery, electric motors, power and distribution transformers, sericulture, aluminium, dyestuffs, ball bearings and automobiles have been granted protection. In suitable cases, it has also recommended the termination of protection. Thus, protection was withdrawn in accordance with the Commission's

recommendations from a number of industries like dry batteries, pencils, fountain-pen inks, ferro-silicon, mother of pearl and metal buttons, bicycles, diesel fuel injections, engineers' steel files, calcium carbide, soda ash, titanium dioxide, caustic soda, etc.

The Tariff Commission is thus playing its role in promoting industrial growth. The Commission is now an integral part of the planning and development machinery of the Government.

National Productivity Council

Along with expansion of industrialisation, it is necessary to adopt measures for increasing productivity so as to secure the maximum returns from the available financial resources. On the recommendations of the Indian Productivity Delegation which visited Japan during October-November 1956, the Government of India set up a National Productivity Council in February 1958. The Council is an autonomous body with representatives of employers, labour, Government and other concerned interests.

The Council functions through its headquarters in New Delhi and six Regional Directorates at Bombay, Calcutta, Madras, Kanpur, Bangalore and Ludhiana. These are manned by industrial engineers and specialists in organising productivity training and providing services to industrial units. The Council has also concerned itself with subjects such as human relations, incentives, management accounting, quality control, productivity research and fuel efficiency service.

CHAPTER III

INDUSTRIAL FINANCE

India has embarked on a huge industrial programme. A large part of the programme, as we have seen, has been left open to private enterprise. It is, therefore, essential that adequate finance should be made available to facilitate the growth of industries in this sector. Also, for rapid industrial development, indigenous capital resources have to be supplemented by foreign assistance and collaboration. These factors are considered in this chapter.

Industrial Finance Corporation

This Corporation, established under the Industrial Finance Corporation Act, 1948, provides financial assistance to public limited companies and co-operative societies. The net financial assistance sanctioned by the Corporation up to the end of 1964 totalled Rs. 203.55 crores out of which Rs. 135.63 crores had been disbursed or made available up to December 31, 1964.

The Industrial Development Bank of India acquired on August 1, 1964 a fifty per cent interest in the share capital of the Industrial Finance Corporation of India. The Central Government and the Reserve Bank of India have no shareholding in the Corporation since that date.

State Financial Corporations

At present every State in India except Nagaland has a State Financial Corporation of its own. In Madras, however, the Madras Industrial Investment Corporation Limited, established by the State Government in 1949 under the Companies Act, is functioning on the lines of a State Financial Corporation. The Punjab Financial Corporation caters to the needs of industries

in the Union Territories of Delhi and Himachal Pradesh, besides Punjab. Similarly, the Assam Financial Corporation caters to the needs of industries in the Union Territories of Tripura and Manipur. The jurisdiction of the Maharashtra State Financial Corporation has been extended to the Union Territories of Goa, Daman and Diu with effect from July 30, 1964.

The total loans sanctioned (effective) by all the Corporations including the Madras Industrial Investment Corporation Limited amounted to Rs. 74.34 crores on June 30, 1964. Out of this, a sum of Rs. 55.69 crores had been disbursed—the loans sanctioned and disbursed to small-scale units amounting to Rs. 16.52 crores and Rs. 11.62 crores, respectively. Loans and advances granted by the Corporations and outstanding as on November 27, 1964 amounted to Rs. 45.21 crores. Subscriptions directly made by some of the Corporations (excluding Madras Industrial Investment Corporation) to the debentures of industrial concerns and to shares which had to be taken up in fulfilment of underwriting obligations aggregated Rs. 37.02 lakhs and Rs. 17.66 lakhs, respectively. One of the Corporations had also sanctioned applications for Rs. 1.21 crores in respect of guarantees for deferred payments for the purchase of capital goods within India.

Industrial Credit and Investment Corporation

This is a privately owned and managed public limited company set up in 1955. It provides long-term finance to industries in the private sector in the form of loans (both in rupee and foreign exchange) and equity participation by underwriting issues of capital, etc. Up to the end of September 1964, the net financial assistance sanctioned by the Corporation totalled Rs. 95.07 crores of which the amount disbursed aggregated Rs. 50.71 crores (Rs. 22.86 crores in foreign currencies and Rs. 27.85 crores in rupees).

Industrial Development Bank

As the existing arrangements for the provision of credit for the expansion or development of industry were not considered

adequate in relation to the needs of the various enterprises or projects, the Industrial Development Bank of India was established on July 1, 1964 under the Industrial Development Bank of India Act, 1964. The Development Bank, as an apex institution, is intended to co-ordinate the activities of all the existing financial institutions such as the Industrial Finance Corporation, Industrial Credit and Investment Corporation, the State Financial Corporations, etc., which are or may be concerned with the provision of finance for industrial development. The Bank will provide refinance to these institutions, grant direct loans to industrial concerns and promote and develop key industries, as required by the circumstances.

The Development Bank was started with an authorised capital of Rs. 100 crores and an issued capital of Rs. 10 crores wholly subscribed by the Reserve Bank of India. It has also been given an interest-free loan of Rs. 10 crores by the Central Government. Further, it has also access to two special funds, namely, the National Industrial Credit (Long-Term Operations) Fund, which is intended to be fed out of appropriations made from the profits of the Reserve Bank and the Development Assistance Fund, which would be created from the contributions made mainly by the Central Government.

The Industrial Development Bank of India acquired on August 1, 1964 a 50 per cent interest in the share capital of the Industrial Finance Corporation and it took over the Refinance Corporation for Industry Limited with effect from September 1, 1964.

During the first six months of its working, the Bank received 56 applications for financial assistance. Out of these, 45 were for underwriting public issues of preference and ordinary shares aggregating Rs. 16.96 crores, 9 for loans totalling Rs. 11.3 crores and 2 for the issue of guarantees for Rs. 2.63 crores. The Bank had sanctioned 17 applications, 14 for underwriting, with a commitment to the tune of Rs. 2.60 crores (comprising Rs. 2 crores of ordinary and Rs. 60 lakhs of preference shares). 2 for loans to the tune of Rs. 46 lakhs and one in respect of a guarantee for Rs. 1 crore. During September-December 1964,

the Development Bank sanctioned refinance in respect of 52 applications for Rs. 9.05 crores and disbursed Rs. 7.42 crores. Since September 1, 1964, the Government of India has authorised the Development Bank to act as its agent in administering and managing the scheme for guarantee of advances granted to the private sector of the coal industry. The Bank had issued 3 guarantees for Rs. 15 lakhs up to the end of December 1964. The Bank has also subscribed an aggregate sum of Rs. 50.4 lakhs to the bond issues of two State Financial Corporations.

Foreign Collaboration

The Government of India consider that foreign investment has to play an important part in the economic development of this country. Foreign investment is encouraged in the fields where it contributes to technical know-how and ensures achievement of planned targets.

The policy relating to the participation of foreign capital was initiated in the Industrial Policy Resolutions of April 1948 and April 1956, and in the Prime Minister's statement in Parliament on April 6, 1949. While Government have been generally encouraging investment of private foreign capital in the country, it is necessary that this is done on a selective basis.

The Government of India welcome technical know-how from abroad in industrial undertakings in the public as well as in the private sector. The general policy in regard to foreign participation is as follows :

(1) Once foreign capital is admitted into the country there is no discrimination between foreign and Indian undertakings.

(2) Government have placed no restrictions on the remittance of profits, dividends and interest. Repatriation of investments from sterling area countries (except Pakistan) and Norway, Sweden and Denmark is allowed freely. Repatriation of investments by residents of other countries, together with any capital appreciation, is also allowed if the investment was made in approved projects after January 1, 1950.

(3) If and when foreign enterprises are acquired, fair and equitable compensation will be paid.

(4) Save in exceptional cases, the majority interest in ownership and effective control of an undertaking should remain in Indian hands. As a rule, Indian participation in foreign-controlled companies is insisted upon right from the start.

(5) Vital importance is attached to the training and employment of Indians in positions requiring technical skill and experience. When Indians of requisite qualifications are not available, Government do not object to the employment of foreign experts.

Foreign technical collaboration in industry is also permitted on payment of royalty or technical know-how fees to the non-residents. In such cases approval is given by the Government if the payment is considered reasonable in relation to the benefits that are expected to accrue.

Foreign investment is not allowed in purely trading, commercial, financial or banking enterprises, as sufficient Indian expertise exists in these fields. In general, foreign investment is considered specially worthwhile in the industries which are not already well and widely established in the country and which require substantial import of capital equipment and machinery. Priority is given to the fields in which establishment of joint venture projects would secure technological advantage or bring valuable new skills into the economy.

Foreign collaboration has been received in different forms and from various countries and institutions. Among the participating countries are the United States, the United Kingdom, the Soviet Union, Norway, Finland, West Germany, France, Czechoslovakia and the Commonwealth countries, including Australia, Canada and New Zealand under the Colombo Plan. Among institutions, mention may be made of the International Bank for Reconstruction and Development, the Ford Foundation and various agencies of the United Nations.

In addition to economic or financial assistance, India has also received substantial technical assistance from the United Nations and its specialised agencies, from the United States under the Point-4 Programme, the U.S. Technical Co-operation Mission, the Ford Foundation, etc., and from the Commonwealth countries

under the Colombo Plan. This assistance comprised the services of experts, training facilities for Indian personnel and the supply of demonstration equipment.

National Industrial Development Corporation

The National Industrial Development Corporation was set up in October 1954, as a Government-owned private limited company. It was conceived mainly as an instrument of the Government for promoting, establishing and executing industries which are likely to advance industrial development of the country; and to aid, assist and finance industrial undertakings.

The Corporation is acting as the agency of the Government of India for investigation and initial processing of a number of vital projects for filling up gaps in the industrial structure of the country, and the grant of special loans to certain selected industries.

The Corporation has formulated several projects for the establishment of new industries such as foundry and forge project, coal mining machinery project, synthetic rubber, carbon black, heavy machine tools, wood pulp, biogas project, etc.

In 1960, the Corporation set up its Technological Consultancy Bureau which renders consultancy and engineering services to the various Government and public sector projects. During the short span of its existence, the Bureau has already rendered the complete range of consulting engineering services beginning with feasibility studies to complete engineering designs. Such services have been rendered to a number of projects including the three plants of the Indian Drugs and Pharmaceuticals Limited, precision instruments plants of the Instrumentation Limited, Koyna Aluminium Project, Marine Diesel Engine Project, Pumps and Compressors Project, Ball and Roller Bearings Project, Miniature Motor Production Plant, etc. The Bureau is also being used for advance planning of the projects which have been given high priority in the Fourth Plan.

The total amount of loans sanctioned and disbursed by the Corporation for the rehabilitation and modernisation of the cotton

textile and jute industries and for the expansion of machine tool units as on March 31, 1964 was as under :

	Loans sanctioned	Loans disbursed
	Rs.	Rs.
Cotton textile	19,65,15,000	8,41,35,000
Jute	7,54,20,000	5,56,96,000
Machine tools	1,00,00,000	87,87,000
TOTAL ..	28,19,35,000	14,86,18,000

In addition to the grant of loans on long-term basis, the Corporation has also made available to cotton textile mills indigenous machinery of the value of Rs. 3.75 lakhs on hire-purchase basis.

In February 1963, the Government of India issued instructions to the Corporation that it should not entertain any fresh loan applications. The activities of the Corporation in the field of loan operations are now confined only to pending loan applications, the disbursement of loans already committed and the recovery of the existing loans.

NATIONAL SMALL INDUSTRIES CORPORATION

The National Small Industries Corporation was set up in February 1955 as a private limited company, with the main object of rendering marketing assistance to small-scale industrial units. The Corporation had set up four subsidiary corporations at Bombay, Calcutta, Delhi and Madras to look after its marketing and hire-purchase programme. The subsidiary corporations have since been converted into Branch Offices of the Corporation with effect from April 1, 1961. The Corporation gets its finances from the Government in the form of share capital, loans and grants. During January-October 1964, machinery worth Rs. 4.50 crores was delivered by the Corporation to the small industrialists and orders were placed for machinery worth Rs. 1.62 crores for supply on hire-purchase basis.

Investment

For the Plan period as a whole, the total fixed investment in manufacturing industries amounted to Rs. 293 crores (excluding investment on replacement and modernisation). New investment in industries in the public sector was of the order of Rs. 60 crores. Investment by the private sector in new projects and expansion programmes amounted to Rs. 233 crores.

Production

The production of capital goods increased by about 70 per cent and of intermediate goods and consumer goods by 34 per cent each. The overall increase in industrial production was 38 per cent.

The effective idle capacity available at the end of the First Plan in major national industries like cotton and jute textiles, cement, sugar and paper was negligible. Some idle capacity, however, still existed in the superphosphate, soap, vegetable oils, vanaspati and paint industries and in some engineering industries, such as diesel engine and radio, and in the re-rolling sector of steel and non-ferrous metal industries.

At the same time, appreciable diversification of production was achieved during the First Plan. Among the new products manufactured for the first time were : staple fibre and cellulose acetate filament, titanium dioxide, calcium carbide, hydrogen peroxide, rare earth compounds, ammonium chloride, newsprint, carding engines, automatic looms, steel wire ropes, jute spinning frames, deep well turbine pumps and motors and transformers of higher ratings, layer-built batteries, benzene hexachloride, penicillin, D.D.T., sulphur, black and azo dyes.

Public Sector

Among other things, the Plan provided for the completion of the Chittaranjan Locomotive Works in West Bengal, and the Machine Tools Factory at Jalahalli in Mysore State, as also for the expansion of the Sindri Fertilizer Factory and for the acquisition and development of the Visakhapatnam ship-building yard. It was further proposed to set up penicillin and D.D.T. factories.

CHAPTER IV

PLANNED DEVELOPMENT

First Five Year Plan

The First Five Year Plan represented a modest but significant step forward in the industrial growth of India. Although the Plan gave high priority to the improvement of agriculture, it also initiated a process of industrial planning. It was agreed that the aim of industrial planning should be to make good the deficiencies in the industrial sector and to initiate developments which would become the basis for a rapid expansion in this field. The private sector had to play an important part but the public sector had to develop industries for which private enterprise was unable to find resources or was unwilling to take risks.

The Plan laid down the following order of priorities for industrial development :

1. Fuller utilisation of existing capacity in producer goods industries like jute and plywood and consumer goods industries like cotton textiles, sugar, soap, vanaspati, paints and varnishes;
2. Expansion of capacity in capital and producer goods industries like iron and steel, aluminium, cement, fertilizers, heavy chemicals, machine tools, etc;
3. Completion of industrial units on which a part of the capital expenditure had already been incurred; and
4. Establishment of new plants which would lend strength to the industrial structure by rectifying the existing lacunae and drawbacks as far as resources permitted, e.g., manufacture of sulphur from gypsum, chemical pulp for rayon, etc.

Among the projects of the State Governments, the more important were the Madhya Pradesh newsprint project, designed to produce about one-third of the country's requirement of newsprint, and the expansion of the Mysore Iron and Steel Works, using for the first time in this country the technique of electric smelting of iron ores.

The Sindri Fertilizer Factory, the Chittaranjan Locomotive Works, the Indian Telephone Industries and the Integral Coach Factory achieved satisfactory progress. However, the projects relating to the iron and steel industry and the heavy electrical equipment plant could not be taken up for implementation in the Plan period. The Machine Tools Factory, the Uttar Pradesh Government Cement Factory, the Nepa Newsprint Factory and the Bihar Superphosphate Factory were behind schedule.

Private Sector

During the Plan period, some progress was made in increasing the size of units through expansions. The Alwaye smelter for aluminium was expanded to 5,000 tons per annum and new smelters of 10,000 tons capacity were envisaged. Some of the rayon plants were enlarged and further expansions were taken in hand. The Indian Iron and Steel Company increased its finished steel capacity from 2,25,000 tons to about 3,50,000 tons, and initiated action for further expansion to 8,00,000 tons of saleable steel. Similarly, the average size of plants in the cement, paper, sulphuric acid, soda ash, caustic soda, sewing machines, bicycles, electric fans, power transformers and certain other industries showed increases, though in varying degrees.

Targets of production, as distinct from capacity, were achieved, more or less, in the case of cotton textiles, sugar, vegetable oils, cement, paper, soda ash, caustic soda, rayon, electric transformers, bicycles, sewing machines and petroleum refining.

Second Five Year Plan

The First Plan was regarded essentially as a period of preparation for large-scale industrial development in the country. While the main emphasis during the First Plan was on fuller utilisation

of the existing industrial capacity, the Second Plan gave high priority to the expansion of industry, with particular emphasis on the development of basic and heavy industries. It emphasized that rapid industrialisation and diversification of economy was the core of development. If industrialisation was to be rapid enough, the country must aim at developing basic industries and industries which produce machines to fabricate other machines for further development.

Within the framework of the policy set out in the Industrial Policy Resolution of 1956, the next phase in the expansion of industrial capacity was conceived in terms of the following priorities :

(1) Increased production of iron and steel and of heavy chemicals, including nitrogenous fertilizers, and development of the heavy engineering and machine building industries;

(2) Expansion of capacity in respect of other developmental commodities and producer goods, such as aluminium, cement, chemical pulp, dyestuffs and phosphatic fertilizers, and of essential drugs;

(3) Modernisation and re-equipment of important national industries which have already come into existence, such as jute and cotton textiles, and sugar;

(4) Fuller utilisation of existing installed capacity in industries where there are wide gaps between capacity and production; and

(5) Expansion of capacity for consumer goods, keeping in view the requirements of common production programmes and production targets for the decentralised sector of industry.

Investment

The Second Plan involved a total investment of Rs. 1,620 crores in industries in the public and private sectors. This comprised Rs. 770 crores in the public sector and Rs. 850 crores in the private sector.

The industry-wise break-up of the total outlay of Rs. 1,620 crores is given below in crores of rupees :

(i) Metallurgical—iron and steel, aluminium and ferro-manganese 770.0;
(ii) Engineering, heavy and light 175.0;
(iii) Chemicals including drugs and pharmaceuticals, dyestuffs, plastics, chemical pulp, coal carbonisation and fertilisers 140.0;
(iv) Cement, electric porcelain and refractories 60.0;
(v) Petroleum refining 30.0;
(vi) Paper, newsprint and security paper 40.0;
(vii) Sugar 56.0;
(viii) Cotton, jute, woollen and silk yarn and cloth 50.0;
(ix) Rayon and staple fibre 34.0;
(x) Others 115.0;
(xi) Replacement and modernisation 150.0.

Production

The overall index of industrial production (1950-51=100) rose from 139 in 1955-56 to 194 in 1960-61. The index for producer goods, which stood at 132 in 1955-56, rose by 73 per cent and that for factory produced consumer goods, which stood at 128 in 1955-56, by 18 per cent.

In terms of overall industrial production, the increase achieved in the Second Plan was about 49 per cent, as compared to 38 per cent in the First Plan.

Physical Achievements

The physical achievements of the First and Second Plans (1951-52 to 1960-61) and the growth and diversification of industry were remarkable, particularly so, in the five years of the Second Plan.

Three new steel works, each of 10 lakh tons ingot capacity, were completed in the public sector; two existing steel works in the private sector were expanded so as to bring their ingot capacity to 20 lakh and 10 lakh tons respectively.

Foundations were laid of the heavy electrical and heavy machine tools industries and of heavy machine building and other branches of heavy engineering. The production of machinery for the cement and paper industries was started for the first time. In chemical industries there was an advance on a wide front, leading not only to larger units and greatly increased output of basic chemicals, such as nitrogenous fertilisers, caustic soda, soda ash and sulphuric acid, but also to the manufacture of a number of new products like urea, ammonium phosphate, penicillin, synthetic fibres, industrial explosives, polyethylene, newsprint and dyestuffs.

The output of many other industries specially bicycles, sewing machines, telephones, electrical goods, textile and sugar machinery increased substantially. New skills were learnt by the workers and a large and growing class of industrial managers came into being. Organised industrial production practically doubled in these ten years. New industrial townships and various factories sprang up in the environs of the main cities of the country.

Third Five Year Plan

The main emphasis in the Third Five Year Plan is on the establishment of basic capital and producer goods industries—with special attention to machine building programme—and also on the acquisition of the related skills, technical know-how and designing capacity, so that in the following Plan periods the growth of the economy will become self-sustaining and increasingly independent of outside aid. The priorities have been laid down as follows:

(i) Completion of Second Plan projects which remained to be implemented or which had been deferred owing to foreign exchange difficulties;

(ii) Expansion and diversification of capacity of the heavy engineering and machine building industries, castings and forgings, alloy tool and special steels, iron and steel and ferro-alloys and step-up of output of fertilizers and petroleum products;

(iii) Increased production of major basic raw materials and producer goods like aluminium, mineral oils, dissolving pulp, basic organic and inorganic chemicals and intermediates inclusive of products of petrochemical origin; and

(iv) Increased production from domestic industries of commodities required to meet essential needs like essential drugs, paper, cloth, sugar, vegetable oils and housing materials.

The development programmes for industries and minerals envisaged under the Third Plan originally entailed an outlay of about Rs. 3,000 crores, with a foreign exchange component of about Rs. 1,338 crores. The break up was as follows :

Third Plan Outlay on Industries

(In crores of rupees)

	Public Sector		Private Sector		Public and private Sectors	
	Total	Foreign exchange	Total	Foreign exchange	Total	Foreign exchange
New investment						
Mineral development	478	200	60	28	538	228
Industrial development	1,330	660	1,125	450	2,455	1,110
TOTAL ..	1,808	860	1,185	478	2,993	1,338
Replacement ..	—	—	150	50	150	50

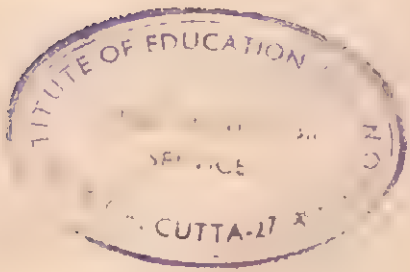
The fixed investment of Rs. 1,808 crores for industries and minerals in the public sector shown in the table above does not include (i) assistance to plantation industries, which do not strictly fall within the scope of manufacturing industries; (ii) the cost of the construction subsidy given to the Hindustan Shipyard; (iii) programmes of the National Productivity Council and the Indian Standards Institution and expenditure on the extension of the metric system of weights and measures; (iv) assistance to the private sector through the National Industrial Development Corporation, and (v) direct loans and state participation in private undertakings.

Including the above, the overall cost would have been about Rs. 1,882 crores, whereas it was possible to make a provision of

Rs. 1,520 crores only for them (Rs. 1,450 crores at the Centre and Rs. 70 crores in the States).

Due to a general increase in construction costs, it is now estimated that while the financial provisions made in the Plan will be exceeded, there will be a larger spill-over into the Fourth Plan than was earlier visualised.

Industrial production recorded moderate increases during the first three years of the Third Plan. The index of industrial production (with 1956 as base) increased from 139 in 1961-62 to 151 in 1962-63 and 164 in 1963-64.



CHAPTER V

PROGRESS OF STATE UNDERTAKINGS

The preceding pages have given a general survey of India's policy and programme of industrial development since the attainment of freedom, against the background of the pre-Independence period. An account of the progress achieved in various important industries is given in the rest of the pamphlet.

The present chapter reviews the progress achieved by individual public sector undertakings of importance. These undertakings, under the administrative control of the Government, are set up in the form of companies in which the shares are held by the President or his nominees, and are managed by the Boards of Directors which include both officials and non-officials.

Fertilizers

The Sindri Fertilizer Factory was one of the first big state-owned and state-managed industrial enterprises. Set up at a cost of about Rs. 28 crores, it proved to be the forerunner of several other similar state undertakings, as well as a model of progressive development. It is not only one of the biggest fertilizer producing unit in the East; it is also the centre and nucleus of a heavy chemical industry in the making.

The factory went into production in October 1951 with a total production, for 1951-52, of 34,800 tons of ammonium sulphate. Within a year, the production went up to 2.19 lakh tons and in 1960-61 it produced 3.05 lakh metric tons of ammonium sulphate. In April-December 1964, it produced 2,23,960 metric tons as compared to 2.30,597 metric tons during the corresponding period in the preceding year. The scheme to raise the output by about 60 per cent by utilising the entire quantity of 100 lakh cubic feet of gas from the coke oven plant has been completed at a cost of about Rs. 15 crores. The

expansion plants now running at maximum possible capacity envisage the production of 70 tons of urea and 400 tons of ammonium sulphate nitrate (double salt) per day. In April-December 1964 the factory produced 12,682 tonnes of urea and 33,593 tonnes of double salt, compared to 13,385 and 34,178 tonnes, respectively, in the corresponding period of the preceding year.

In 1961, another factory was set up at Nangal at a cost of Rs. 30 crores for production of 3,88,000 tonnes of nitro-limestone (equivalent to 80,000 tonnes of nitrogen) and 14 to 15 tons of heavy water per annum. The fertilizer part of the factory was commissioned in February 1961. It produced 2,82,319 tonnes of calcium ammonium nitrate during April-December 1964 as compared to 2,80,435 tonnes during the same period of 1963. The heavy water plant produced its first quantum in August 1962; during April-December 1964, it produced 8,421 kg. of heavy water as compared to 8,739 kg. during April-December 1963.

The factory at Rourkela, which is now under the control of the Hindustan Steel Ltd., produced 1,06,264 tonnes of calcium ammonium nitrate during 1963.

Additional units are being set up in the public sector at Trombay, Namrup, Neyveli, Durgapur and Naharkatiya. The factory at Trombay, expected to produce 99,000 metric tons of urea and 3,30,000 metric tons of nitro-phosphate per year, has already started functioning. Neyveli will have a capacity of 70,000 tons and Naharkatiya of 32,500 tons of nitrogen.

A factory is being designed at Gorakhpur to produce 80,000 tonnes of nitrogen and another in Korba (Madhya Pradesh) with a capacity of one lakh tonnes of nitrogen; both will produce nitrogen in the form of urea.

The Fertilizer Corporation of India Limited was formed in January 1961 (authorised capital Rs. 75 crores) to administer the public sector fertiliser factories including those under construction.

In its third stage of expansion, the FACT envisages the production of 70,000 tons of nitrogen and 33,400 tons of P_2O_5 per

annum, the end products being ammonium sulphate, ammonium phosphate, single superphosphate and ammonium chloride. The scheme will cost Rs. 11.5 crores. The Union Government have acquired majority control in the concern and have provided the bulk of funds required for the expansion. Part of the expansion programme of the factory has since been completed.

Insecticides and Anti-biotics

The Government of India set up a DDT factory in Delhi with the assistance of UNICEF and WHO. The factory, which is managed by the Hindustan Insecticides Limited (authorised capital Rs. 1 crore), commenced production in April 1955. Its capacity was doubled to 1,400 tons per annum in 1958. In 1960-61, it exceeded the capacity by 50 tons and reached the production of 1,503 tons in 1961-62. The 1963-64 production was, however, lower at 1,445 tons. A second factory (capital cost Rs. 79 lakhs), set up at Alwaye, Kerala (capacity 1,400 tons of technical DDT), commenced regular production in July 1958 and produced 1,166 tons in 1963-64.

The Government of India set up a penicillin factory at Pimpri near Poona with the help of UNICEF and UNTAA. Production began in August 1955. The management of the factory vests in the Hindustan Antibiotics Limited, a Government undertaking with an authorised capital of Rs. 4 crores. Production at the factory has been steadily increasing; during 1962-63, it amounted to 526.1 lakh mega units of pencillin (in finished form for clinical use) including 24.4 lakh mega units processed from imported first crystals. The 1963-64 output was 515.4 lakh mega units. The factory's annual capacity has been increased from 600 lakh mega units to 840 lakh mega units at a cost of Rs. 25 lakhs.

A streptomycin plant set up at Pimpri (cost Rs. 2.1 crores) with a capacity of 40-45 tonnes per year went into regular production in February 1963. The scheme for doubling the capacity of the plant to 80-90 tonnes per annum at a cost of Rs. 60 lakhs was implemented recently.

A pilot plant for the manufacture of 1.5 tonnes of tetracycline per annum was established and trial production of

oxy-tetracycline commenced in August 1961. However, due to infringement of patents the plant had to switch over to chlortetracycline hydrochloride. Government have approved a scheme for the manufacture of 50 tonnes of Vitamin C per annum. A pilot plant has been set up at Pimpri prior to its manufacture on a commercial scale. Production of hamycin, a new antifungal antibiotic, is also being undertaken at the rate of 50 kg. per year. A pilot plant for research and development work is being established at Pimpri. A number of ancillary industries are developing in the Pimpri Industrial Estate.

Locomotives and Coaches

As part of a plan to achieve self-sufficiency in locomotives, the Ministry of Railways have established a locomotive factory at Chittaranjan in West Bengal. Set up in 1950, the factory is now turning out about 170 broad gauge steam locomotives a year. In step with the modernisation plans on the Indian Railways, a start in the manufacture of electric locomotives was made in 1961 and 21 D.C. locomotives have been turned out so far. The manufacture of 25 KV A.C. electric locomotives has also been taken in hand and up to the end of December 1964, 20 such locomotives had been turned out. Capacity is being developed for manufacturing 72 electric locomotives per year by the end of the current Plan period. Besides, the Government-assisted Tata Engineering and Locomotive Works manufacture metre gauge steam locomotives and meet the requirements of the Indian Railways. India has become self-sufficient in respect of steam locomotives. The same is true of wagons and coaches.

The newly set up Diesel Locomotive Works at Varanasi have made a start in the manufacture of diesel locomotives, turning out the first assembled locomotive in January 1964. The factory expects to manufacture 22 locomotives by the end of 1964-65. The annual production target of 150 locomotives is planned to be attained by 1967-68.

The Integral Coach Factory at Perambur, one of the largest coach building units in the world, went into production in October 1955. The Integral Coach Factory was originally planned

for an annual outturn of 350 unfurnished B.G. third class steel coach shells on a single shift. Initially, the furnishing of the coach shells produced was undertaken in various railway workshops. The target of 350 coach shells per annum, which was to have been achieved during the fifth year of production, was actually achieved a year earlier.

It was subsequently decided to introduce second shift working in order to increase the capacity progressively to 700 coach shells per annum with a maximum second shift working. Second shift working was started in certain sections from April 1, 1959 and progressively extended and intensified. The shell outturn in the factory has now reached a level of 650 per annum. The optimum production level of 700 per annum is planned to be achieved during 1965-66.

In the Second Plan, a separate furnishing unit was sanctioned to be added to the factory. This unit commenced turning out furnished coaches early in the Third Plan. The outturn from this unit has progressively increased since then. The unit is at present furnishing all the coach shells turned out from the shell unit.

Starting initially with the manufacture of third class coaches, the factory has since diversified its production to include all types of B.G. coaches. Commencing from October 1963, the factory has also taken up. for the first time. the manufacture of M.G. passenger coaches. During the last two years, the factory has also manufactured A.C. electric multiple unit trailer coaches. The factory is now in a position to undertake the manufacture of almost any type of coaching stock required by the Indian Railways.

Shipbuilding

The Visakhapatnam shipyard's first vessel was launched in early 1948. Four years later, in March 1952, a new company, the Hindustan Shipyard Limited, in which two-thirds of the share capital was held by the Government of India and one-third by the Scindia Steam Navigation Company Limited, purchased the shipyard from the Scindias. In 1961, the Government

acquired Scindias' share-holding as a result of which the entire share capital in the company is now held by the Government.

The shipyard, manned entirely by Indian personnel, has so far delivered 34 ocean-going ships including a passenger-*cum*-cargo vessel, two naval crafts and four small vessels of an aggregate gross tonnage of 1,79,891. Seven ships of 12,300 DW each are under various stages of construction.

The first and second phases of the development programme of the shipyard have been completed at a cost of about Rs. 2.60 crores. The general performance of the yard has distinctly improved. Procurement of indigenous material for ship construction has also improved. In the Second Plan, it was proposed to produce 75,000 to 90,000 GRT against 50,000 GRT during the First Plan period. A programme for development during the Third Plan was drawn up at an estimated cost of Rs. 2.44 crores, a part of which costing Rs. 1.13 crores has already been sanctioned by the Government. The remaining development programme is under consideration of the Government. It has been decided to increase the present capacity of three ships per year to four ships during 1965-66, five during 1966-67 and six ships per year from 1967-68 onwards.

A second shipyard is proposed to be built at Cochin with initial ship-building capacity of 63,000 GRT per year with scope for further expansion later. Land has been acquired for the purpose. A sum of Rs. 15 crores has been provided in the Third Plan for the project. An agreement has been signed with M/s Mitsubishi Heavy Industries Limited, Japan, for carrying out the required investigations and preparing a detailed project report.

Aircraft

The Hindustan Aircraft Factory, Bangalore, was established towards the end of 1940 as a joint stock company. The factory emerged from a War-time repair and overhaul stop to an aircraft manufacturing unit during the post-Independence period.

The Hindustan Aircraft Limited, Bangalore, undertakes the repair, overhaul and manufacture of aircraft for the Indian Air Force. Since 1952, the HAL has been manufacturing the HT-2

trainer aircraft on a large scale for the IAF, the Navy and the flying clubs. The factory has also been manufacturing supersonic jet aircraft (HF-24), the first prototype of which was test-flown in July 1961, and Vampire jet fighters, which form part of the fleet of the IAF. It is also producing jet trainers and the turbo-jet engines to be fitted to them. It has designed and developed a light 4-seater aircraft (Krishak), a light multi-purpose aircraft (Pushpak), and a six-cylinder piston aero-engine.

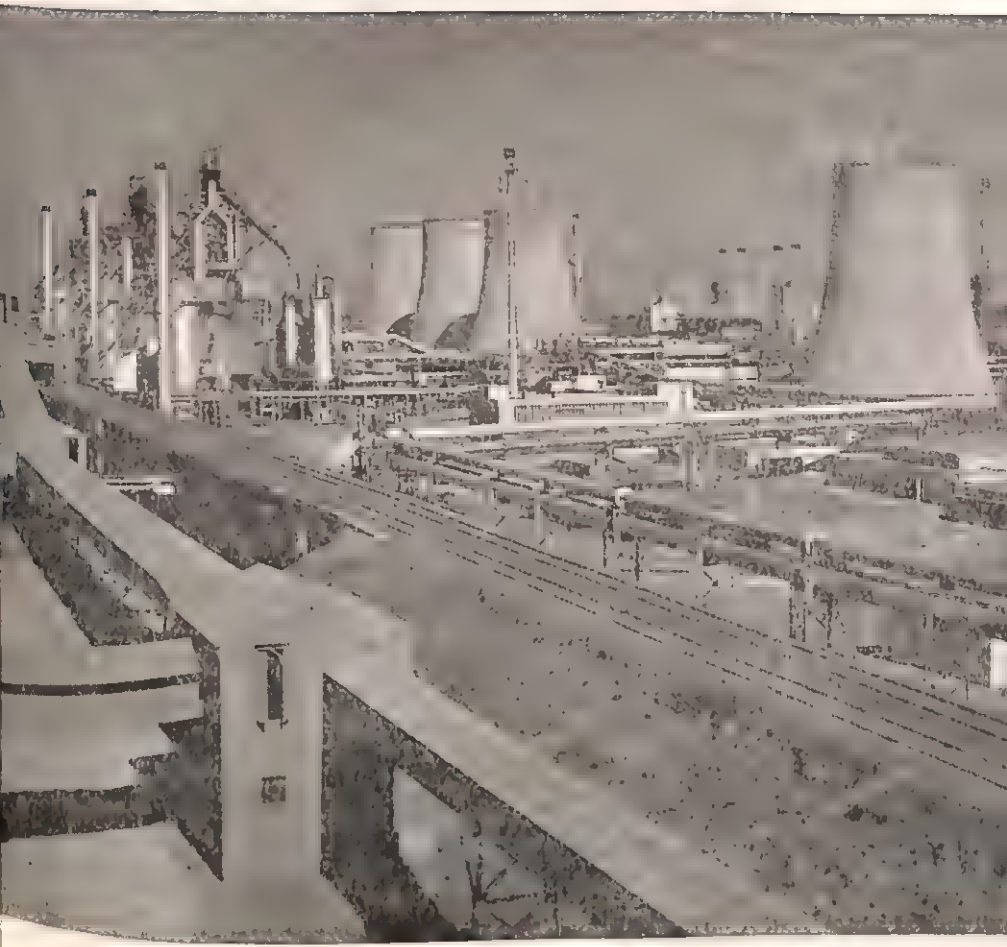
In 1956 an agreement was concluded with the Bristol Aero-engine Factory to make the full range of Bristol Orpheus turbo-jet engines at the HAL. Another licence agreement was reached with Holland Aircraft Company for the manufacture by the HAL of Britain's jet-fighter, the Gnat, the same year. The HAL was recently entrusted with the manufacture of Alouette helicopters under licence from the Fud Aviation Company of France. This factory has also been entrusted with the manufacture of Artouste engines which will power these helicopters.

The ancillary activities of HAL include the building of all-metal broad gauge coaches with modern amenities for the Railways.

The IAF Aircraft Manufacturing Depot, Kanpur, has undertaken the production of AVRO-748 which is the first feeder-line aircraft designed on the fail-safe principles. The pressurised low-wing monoplane is powered by two Rolls Royce Dart propeller-turbine engines, now under progressive manufacture at the HAL, and operates at comparatively low cost. This transport aircraft is intended to replace the Dakota now in service with the Air Force.

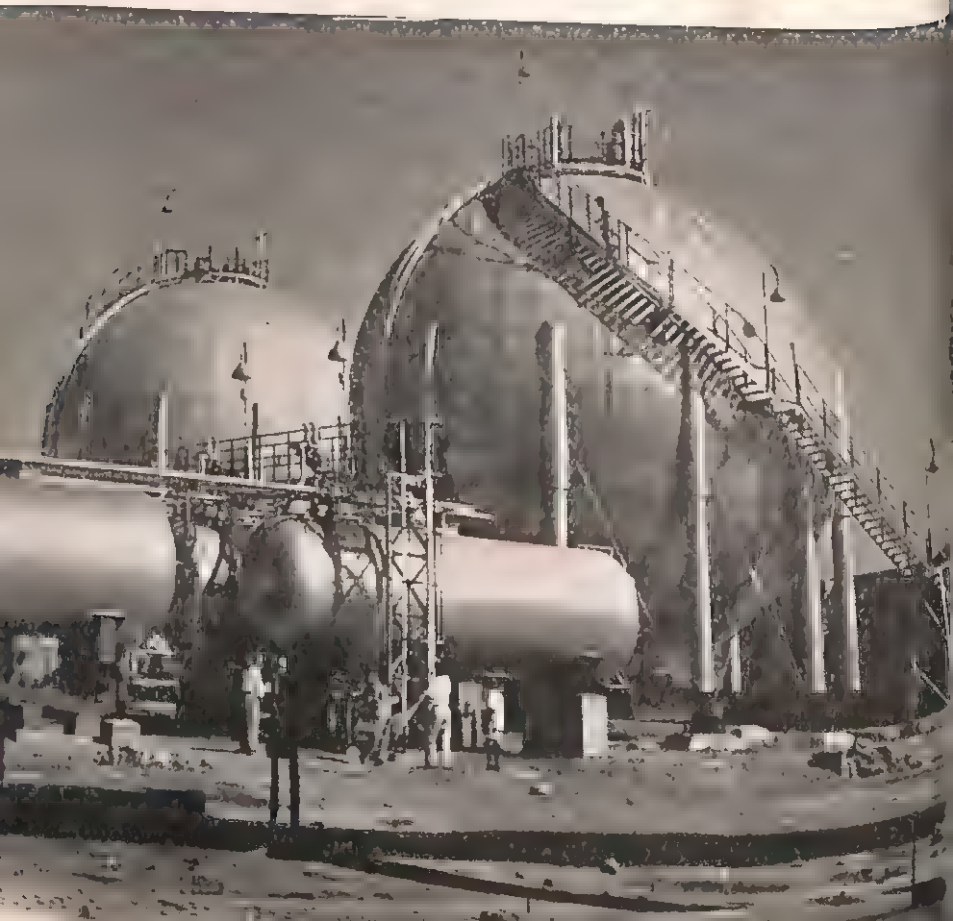
Machine Tools

The manufacture of machine tools or "machines that make machines" lays the basis for industrial expansion. Machine tool manufacture in the public sector was first conceived in 1949. The Government of India entered into a technical collaboration agreement in March 1949 with M/s Oerlikon Machine Tool Works, Buehrle and Co., Zurich, Switzerland, for setting up a factory for the manufacture of machine tools. A company under



Durgapur steel works, one of the three steel plants set up in the public sector

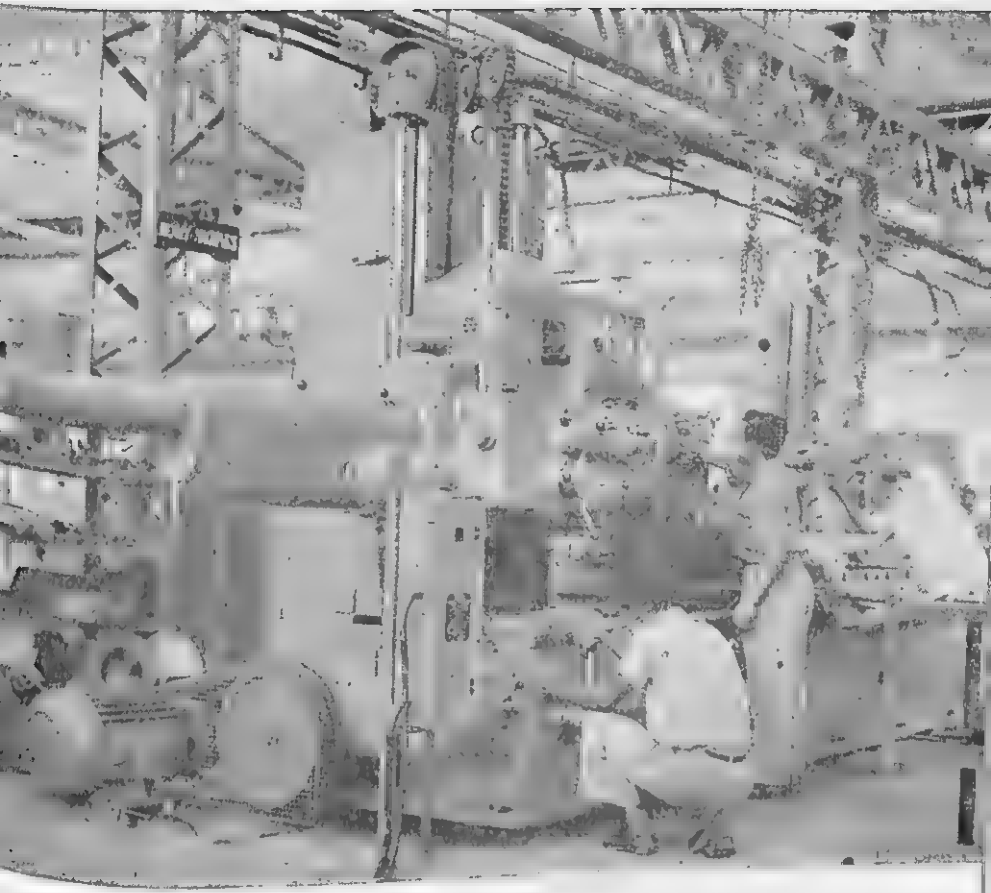
Liquid ammonia storage tanks of the fertilizer factory at Rourkela



'Jalapankhi', a ship built at the Hindustan Shipyard, Visakhapatnam, photographed just before the launching ceremony

Railway engines being assembled at the assembly shop of the Chittaranjan Locomotive Works

Motor cars being assembled at an automobile factory in Bombay

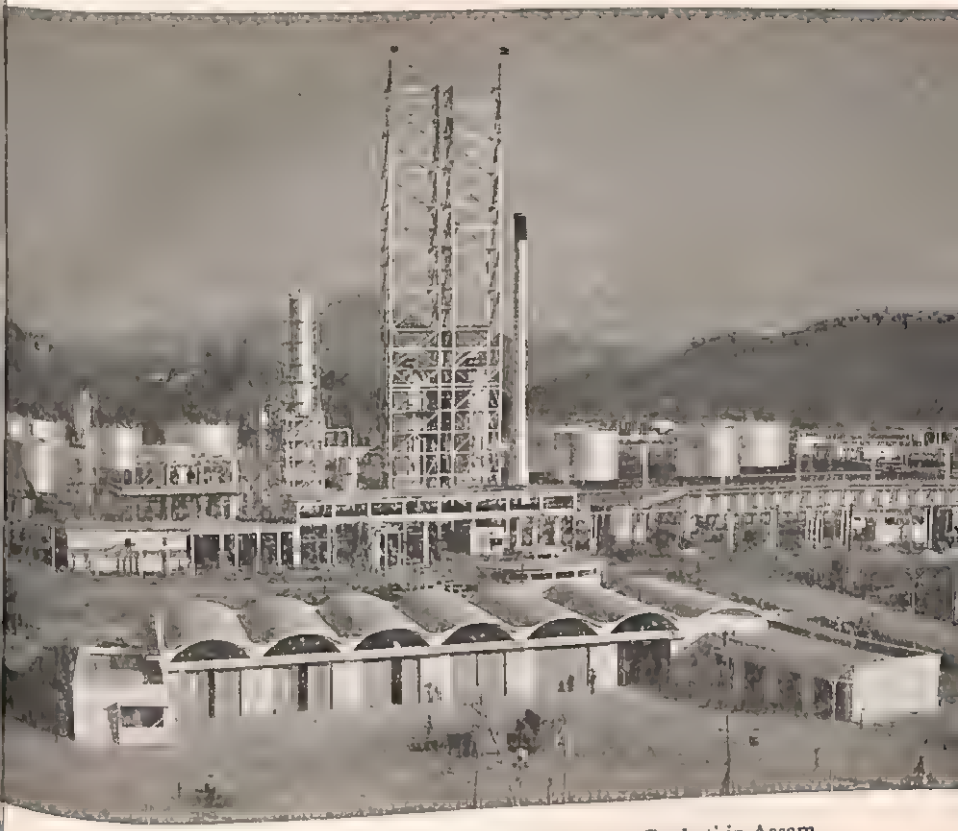


A group of trainees learn how to operate heavy machines in the training workshop attached to the Heavy Electricals, Bhopal

Finished machines being tested at the Hindustan Machine Tools factory at Bangalore

Telephones being assembled at the telephone factory in Bangalore. This factory manufactures enough telephones and tele-communication equipment to meet the growing needs of the country.

AVRO-748, a transport plane, under production at the IAF Aircraft Manufacturing Depot, Kanpur



A view of the oil refinery at Noonmati near Gauhati in Assam

Ordnance factories produce stores and equipment worth crores of rupees every year for the armed forces. Workmen assembling bren guns at the small arms factory

An open-cast coal mine in Madhya Pradesh. This is one of the mines operated by the National Coal Development Corporation.

Nepa paper mills in Madhya Pradesh produces newsprint for the newspapers. More paper mills are being set up to meet the demand for all types of paper.

Hindustan Antibiotics, Pimpri manufactures, besides penicillin, antibiotics like tetracycline, streptomycin, etc. Penicillin bottles manufactured at the factory being given a final test

Cotton textiles is one of the oldest large-scale industries of India employing nearly a million workers, a large percentage of whom are women. Inside a cotton textile mill in Coimbatore

Although there has been considerable development of large-scale industries, it is the cottage and small-scale industries which provide employment to about two crore persons. A specimen of Nirmal work from Hyderabad

the name of Hindustan Machine Tools Limited, was registered on February 7, 1953 and it was decided to build the factory at Jalahalli, Bangalore.

The first batch of predominantly Indian lathes was produced in the factory (now completely owned by the Government) in May 1956. During 1957-58, the factory produced 402 machines (313 lathes and 89 milling machines), thus exceeding the Second Plan target. The prices of the lathes were reduced from the original Rs. 39,000 to Rs. 29,500 in June 1958. This compared favourably with the imported landed cost of Rs. 40,500 for a similar Swiss lathe.

In collaboration with European machine tool manufacturers, diversification of production has been effected and a project for the construction of a second machine tool production unit at Bangalore, so as to raise production capacity to 2,000 machines per annum, was completed in May 1961. During April-December 1964, the two units produced 1,483 machines (value over Rs. 6.12 crores) compared to 1,486 machines in April-December 1963 (value Rs. 6.05 crores). It is proposed further to diversify, with foreign collaboration, the company's already wide range of machine tool production. The company's third machine tool factory at Pinjore in Punjab was commissioned in October 1963. Designed to produce all types of milling and gear cutting machines, its target is 1,000 machines of the value of Rs. 5 crores per year by 1966-67. The factory is capable of expansion to a production of 2,000 machines a year. Another factory at Kalamassery in Kerala, built at a cost of Rs. 7.50 crores, went into production in October 1964. A factory at Hyderabad, estimated to cost Rs. 7.75 crores, will go into production during 1965. Construction of the watch factory of the HMT has been completed, and it produced 1,25,815 watches during April-December 1964.

An important development was the setting up of the Machine Tool Institute at Bangalore at an estimated cost of Rs. 1.19 crores in June 1962, whose main activities are development of designing, training, standardisation, prototype manufacture, research, documentation and collaboration with other institutes

in the allied fields. The Institute has entered into an agreement for technical collaboration with Technoexport, Prague. Under the agreement, Technoexport will supply machinery and tools to the Institute.

The Praga Tools Corporation Limited, Hyderabad, of which majority shares are held by the Union and the Andhra Pradesh Governments, also produced Rs. 1.05 crores worth of tools during 1963-64.

Heavy Engineering

The production of heavy industrial machinery is being specially fostered by the National Industrial Development Corporation. The Corporation has completed examination of a number of projects. It has also been entrusted with the initial processing of two projects for the manufacture of precision instruments, to be set up with Soviet assistance. Among other proposals under its consideration are the manufacture of alumina/aluminium with Hungarian assistance, compressors and pumps with Soviet collaboration and heavy plate and vessels and heavy structurals with British collaboration. It has been decided to set up a sulphuric acid plant based on pyrites at Sindri with a capacity of 400 tons a day under the Pyrites and Chemicals Development Company.

An agreement was reached in 1957 with the Government of the USSR for assistance in establishing a heavy machine-building plant at Hatia near Ranchi in Bihar (capacity 80,000 tons per annum), a coal mining machinery plant (capacity 45,000 tons) and an optical glass factory (both to be located at Durgapur in West Bengal). Adjacent to the heavy machine-building plant under construction now is a foundry forge plant being set up with Czechoslovak assistance to serve as its metallurgical base. A body called the Heavy Engineering Corporation (authorised capital Rs. 50 crores) was formed in December 1958 to administer these projects as also the heavy machine tools project (capacity 10,000 tons) to be set up with credit and technical co-operation from the Government of Czechoslovakia. Construction work on the coal mining machinery projects is also in progress.

FOUNDRIES

Originally established in 1872 as a private organisation, the Nahan Foundry Limited was inaugurated as a public sector concern in October 1952 with an authorised capital of Rs. 1 crore.

The foundry manufactures mainly agricultural implements such as cane-crushers. It also produces sleepers for the railways, and cast iron saddles and anchors for the Posts and Telegraphs Department. Production during 1963-64 (up to February 1964) amounted to 2,558 tonnes. As a result of the steps taken to modernise the foundry and diversify production, the foundry produced 301 electric meters of different sizes up to 10 H.P., and five horizontal cane-crushers for the first time in 1961-62.

The administrative control of the company was transferred to the Himachal Pradesh Government on September 24, 1964.

The development programme of the Chittaranjan Locomotive Works includes the establishment of a heavy steel foundry, so that the requirements of heavy castings for the railways might be secured entirely from within the country. A 7,000-ton capacity foundry is being set up accordingly.

INSTRUMENTS

The Mathematical Instruments Office, first set up at Calcutta in 1830 mainly for the maintenance and repair of precision instruments, was taken over in June 1957, and reorganised as National Instruments Limited, a Government undertaking with an authorised capital of Rs. 3 crores which has been subsequently raised to Rs. 5 crores. The reorganisation of the company included its shifting to new premises at Jadavpur.

It produces various kinds of scientific and precision instruments, including hydrometers, measuring cylinders, barometers and monmeters. The factory is now concentrating on the production of important instruments requiring specialised skill. There has been a progressive increase in the prodouction of items like thermometers, compasses, vacuum gauges, levels, theodolites, etc. During 1963-64 instruments worth Rs. 83.8 lakhs were produced in the factory and the company made a net profit of

Rs. 18.71 lakhs in that year as against Rs. 11.82 lakhs during 1962-63.

The Opthalmic Glass Project, to be set up at Durgapur (estimated cost Rs. 4 crores) with technical collaboration from USSR, has since been transferred from the Heavy Engineering Corporation to the National Instruments Limited. The company has already entered into a contract with M/s Prommash-Export, Moscow, for supply of machinery and equipment and raw materials.

Heavy Electricals

A wholly Government-owned company, the Heavy Electricals Limited, was registered in 1956 with an authorised capital of Rs. 30 crores. A factory to manufacture heavy electrical equipment such as turbines, transformers, control gear, switch-gear, traction equipment, etc., went into production in 1960 at Bhopal. During 1963-64, the total output from the Heavy Electricals, Bhopal plant amounted to nearly Rs. 5 crores.

A scheme to expand the plant during the Fourth Plan period is being considered. A training school for apprentices has been set up. Graduate engineer trainees are being sent for training to Britain.

Another heavy electrical equipment plant is being set up with Soviet assistance at Ranipur, Hardwar, to manufacture steam and hydro turbines and generators, large-size industrial motors, etc. Construction work is also in progress on (i) the heavy power equipment project, Ramachandrapuram (near Hyderabad), and (ii) the high pressure boiler project, Tiruchirapalli. The latter was formally inaugurated in May 1965 while the former will go into production some time during 1965-66. To start with these three projects were under the Heavy Electricals Limited but in November 1964 a new company named Bharat Heavy Electricals Limited was formed to execute them.

Telephone Industry

The Indian Telephone Industries Limited is another undertaking of the Government which has made fairly rapid progress.

The factory was established in mid-1948 near Bangalore for manufacturing telephones and other tele-communication equipment.

During 1963-64, the factory manufactured 1,46,132 telephones, 1,51,460 auto-exchange lines including spares and ancillary items worth Rs. 7.20 crores and transmission equipment and measuring instruments worth Rs. 1.80 crores. The factory has undertaken the production of several new types of equipment for the railways and defence. The newly developed telephone instrument named *Priyadarshni*, whose performance is far superior to the instrument now in use, has gone into production.

Hindustan Cables

To meet the requirements of telephone cables, the Hindustan Cables Limited was established at Rupnarainpur in West Bengal in 1952 with a subscribed capital of Rs. 1.25 crores. It went into production in 1954 and has made very satisfactory progress since. It exceeded its planned annual capacity of 470 miles of cables in 1956-57. In 1962-63, the factory produced 2,561 km. of dry cables valued at Rs. 2.12 crores and 776 km. of co-axial cables worth Rs. 1.18 crores. The factory produced 2,528 km. of all types of cables valued at Rs. 2.57 crores during January-September 1964. Work is in progress (i) to increase the existing capacity for Dry Cone cables from 1,200 miles to 2,000 miles; (ii) to set up manufacturing unit for 25 million Cone yards of plastic insulated switch board cables and wires; and to establish a wire drawing plant, with production capacity of 1,500 tonnes a year. This will help the company to meet a substantial portion of demands from the Posts and Telegraphs Department, Railways and other Departments.

Electronics

The Bharat Electronics Limited, Jalahali (near Bangalore) was established in 1954 to produce electronic, radio and radar equipment and radio tubes and components. It went into part operation in December 1955 and production has been rapidly increasing every year.

The production programme of the BEL includes the manu-

facture of gentral purpose receivers and medium-power transmitters for the Civil Aviation Department, and equipment for All India Radio, Railways, Meteorological Department, States' police, fire services and the armed forces.

Some other important items under production at the BEL are general purpose communication receivers, medium-power transmitters, mobile trans-receivers and portable man-pack sets.

Defence Industries

The defence industries in India, comprising a number of industrial units and located in different parts of the country, are among the biggest in the public sector. These industries have been serving both the armed forces and the civilian requirements. Efforts have been made towards developing and improving these factories to make the country self-sufficient in defence stores.

Until recently, the ordnance factories catered almost exclusively for the requirements of the Army. During the past few years, stores have also been produced for the Navy and the Air Force. The range of service items produced from indigenous raw materials is being enlarged from year to year.

During 1962-63, the ordnance factories produced stores and equipment worth Rs. 63.90 crores as against Rs. 33.35 crores in 1960-61 and Rs. 41.88 crores in 1961-62. During the first half of 1963-64, the value of issues from the ordnance factories was Rs. 51.71 crores and the total for the year was expected to exceed Rs. 100 crores. The steadily increasing manufacture of special items, hitherto imported, has resulted in substantial savings of foreign exchange.

The service items produced by these factories include artillery guns, heavy mortars, naval guns, barrels and recoilless guns, mountings, carriages and buffers for heavy and medium-calibre guns, light machine guns and other small arms, bombs, shells and various types of ammunition and high explosives, sea mines, depth-charges, parachutes, service clothing and mountaineering equipment. They recently started manufacturing three-ton and one-ton military trucks, jeeps and four types of tractors.

CHAPTER VI

PROGRESS OF INDUSTRIES

STEEL

To meet the rapidly expanding demand for steel, the Government of India has adopted a two-fold policy. On the one hand, it is helping the existing units to expand their capacity. On the other, it has set up three new steel plants on its own.

The table below shows the progress of the industry since 1955 :

Production of Iron and Steel

Year	Hot Metal (In thousand tons)	Finished Steel (In thousand tons)
1955	17,57	12,60
1956	18,07	13,38
1961	49,80	28,10
1962	57,96	35,64
1963	66,03	42,57

The output of finished steel in 1964 was 43.41 lakh tons and is expected to be of the order of 58 lakh tons by the end of the Third Plan.

Second Plan Progress

During the Second Plan, the three existing steel plants, Tata, Indian Iron and Mysore Iron, were earmarked for expansion. Tata were to increase their production to 20 lakh tonnes of steel ingots (15 lakh tonnes of finished steel), Indian Iron to 10 lakh tonnes of steel ingots (8 lakh tonnes of finished steel) and Mysore Iron to 1 lakh tonnes of steel ingots (85,000 tonnes of finished steel). The expansion programmes of TISCO and IISCO have been completed. During 1964, TISCO produced 10.68 lakh tonnes of finished steel. IISCO have on hand a scheme for increasing production from 10 lakh to 13 lakh tonnes of ingots. During the Fourth Plan, it is envisaged that

they will increase their production further to 20 lakh tonnes. In 1964, IISCO produced about 6.5 lakh tonnes of finished steel. The expansion programme of the Mysore Works has just been completed. Meanwhile, they have taken in hand a project to convert the newly installed mild steel production facilities to alloy and special steel production. Under the scheme, the plant would reach the production of 77,000 tonnes of finished alloy and special steels corresponding to 1.06 lakh tonnes of ingots during 1967-68.

Work was taken in hand during the Second Plan period to set up three integrated iron and steel plants at Rourkela, Bhilai and Durgapur in the public sector each with an initial capacity of 10 lakh ingot tonnes. The management of all the three vests in the state-owned Hindustan Steel Limited (authorised capital Rs. 600 crores).

At Rourkela, the construction of the million-ton stage was completed in 1960-61. Production in 1964 was 5.62 lakh tonnes of finished steel as against 5.25 lakh tonnes in 1963. (The fertilizer plant put up as an adjunct to the steel plant, was also commissioned in November 1962). The annual capacity of the Rourkela plant is being expanded to 18 lakh tonnes of ingots which will be rolled into 12 lakh tonnes of finished steel. It is expected that all the units of this expansion will be commissioned by 1967-68.

Bhilai has already exceeded the rated capacity in the production of pig iron, steel ingots and finished steel. During 1963, the production of hot metal and steel ingots at 12.6 lakh and 11.2 lakh tonnes was about 114 and 112.5 per cent, respectively of the rated capacity. Under a contract signed between the Hindustan Steel Limited and the Russian organization 'Tyazhyprom-Export' in February 1962, the capacity of the Bhilai plant is being expanded to 25 lakh tonnes of steel ingots per annum which will be rolled into 19 lakh tonnes of finished and semi-finished steel. The plant produced 6.60 lakh tonnes of finished steel in 1964 as against 6.40 lakh tonnes in 1963.

The Durgapur plant was completed in 1962. All its units including the coal washery have been commissioned. In Decem-

ber 1962, the plant achieved the full rated capacity in the production of pig iron and 92 per cent of the rated capacity in the production of steel ingots. During 1964, the plant produced 4.48 lakh tonnes of finished steel as against 3.55 lakh tonnes in 1963. In the Third Plan period, the plant is being expanded to 16 lakh tonnes ingot capacity to produce 12 lakh tonnes of saleable finished steel in addition to 3 lakh tonnes of pig iron. The expansion work, already under way, is expected to be completed by 1967-68.

A steel plant of an initial capacity of 15 lakh tonnes of ingot steel is proposed to be set up at Bokaro with Russian assistance. The Chief Russian Design Organisation, M/s Gipromeg which was entrusted with the task of the preparation of a detailed project report has since suggested that the capacity of the plant, likely to be commissioned into service in 1971 should be 18 lakh tonnes of steel, with capacity for further expansion to 40 lakh tonnes in stages. A new company, namely Bokaro Steel Limited, has been formed with an initial share capital of Rs. 100 crores to own and operate the project.

Work is in hand to set up an alloy and special steel plant at Durgapur, with an initial capacity of 1,00,000 tons of ingot steel capable of being rolled into 60,000 tons of finished products. The plant, one unit of which commenced production in January 1965, is laid out for expansion to 1.20 lakh tonnes of finished products. Government have also licensed or approved production capacity of 4 lakh tonnes of tool, alloy and special steels in the private sector. Present indigenous production is about 29,000 tonnes of spring steels and 24,000 tonnes of electrical steel sheets a year.

For the supply of washed coal to the steel plants in the public sector, Hindustan Steel Limited have their own coal washeries at Durgapur, Dugda, Bhojudih and Patherdih. A second washery at Dugda is also to be completed shortly.

To relieve the acute shortage of pig iron in the country, steps have been taken to stimulate foundry iron production in the private sector. A capacity of over 2 million tonnes has been licensed in this respect.

Engineering and Electrical Goods

In the economic development of India in recent years, engineering industries have occupied a prominent place, and the Government has been trying to foster their growth. The general index of production in the engineering sector has been rising steadily. India has become self-sufficient in a number of products, and has also been able to produce exportable surplus in several items.

Apart from this marked increase in production, there has been considerable diversification in the range of production of engineering goods. At the same time a greater self-sufficiency has been achieved in the manufacture of components which make up the engineering goods.

Steps have been taken by the Government towards expanding the industrial base of the engineering sector in the Third Plan. For example, facilities have been provided for machine building and supporting services like heavy castings, forgings, structural and machine tools.

The machine-building industries as well as other engineering industries recorded increased production in recent years despite shortage of raw materials and restrictions on the imports of capital goods due to tight foreign exchange position. A number of projects designed to build up and fabricate a wide variety of machines and equipment have been taken up in the public sector. The country is currently producing industrial machinery estimated at about Rs. 300 crores per year, and large numbers of transport vehicles, etc. With increasing supplies of steel and other basic raw materials, the output of machine-building industries is gaining momentum. Stress has also been laid on the establishment of industries that make essential raw materials and components needed by industries.

Additional capacity has been licensed for structurals, steel pipes and tubes, ship-building and repairs and wire ropes. The automobile ancillary industry has achieved higher trends of production and several new units have gone into operation. Manufacture of agricultural tractors and earth-moving equipment like shovels and bulldozers has commenced. During April-December

1964 the two units of the Hindustan Machine Tools Limited produced 1,483 machines (valued at Rs. 6.12 crores) as compared to 1,486 machines in April-December 1963 (valued at Rs. 6.05 crores). Substantial increases have been recorded in the production of light mechanical industries such as ball bearings, typewriters, sewing machines, bicycles, leaf-springs, etc. Data processing machines were manufactured for the first time recently. Among electrical engineering industries, commendable increase in production has been achieved in items like fluorescent and miniature lamps, radio receivers, gramophones, air conditioners, water coolers, refrigerators, house service meters, power cables, electrical steel sheets, etc. Permanent magnets were manufactured for the first time recently. Manufacture of scientific instruments, particularly of geometry boxes, water meters, levels, pressure gauges, etc., maintained steady progress, and manufacture of microscope slides commenced recently.

Chemicals

World War I gave considerable stimulus to the chemical industry in India. Yet India was largely dependent on imports of chemicals on the eve of World War II which gave the industry further impetus. Since Independence, steady progress has been made in the development of the chemical industry. The establishment of the Sindri factory in the public sector was a significant development in this direction. In the private sector, 60 companies dealing with chemical industries came into existence during 1946-50. Sulphuric acid, caustic soda, soda ash, calcium carbide and bleaching powder, potassium permanganate as also organic chemicals like butyl alcohol, butyl acetate, plasticisers, bakers, yeast and the plastic raw materials PVC, phenol formaldehyde resins, polythene and phenolic leminates are now being produced in India. A major bottleneck *i.e.*, dependence on imported intermediates, would be largely overcome with the completion of the projects of the Indian Drugs and Pharmaceuticals Limited and the Hindustan Organic Chemicals Limited. Vitamins B_6 and C were produced for the first time recently, and manufacture of tetracycline and oxy-tetracycline was commenced. A

significant increase has been recorded in the production of penicillin, streptomycin and chloramphenicol, while production of aspirin and Vitamin B_{12} nearly doubled. Production of azo dyes, organic pigments and sulphur black increased but of other types like naphthols slightly declined.

Oil

The demand for petroleum products has been increasing at a very fast rate. In 1948, it stood at 2.2 million tons, it increased to 3.3 million tons in 1950, 5.2 million tons in 1956 and 10 million tons in 1963, *i.e.* it increased by 1½ times between 1948 and 1950 and three times between 1950 and 1963. The basic problem is thus of developing the oil industry at such a pace that the country becomes self-sufficient in the production of petroleum products. This, however, does not rule out the marginal import of some products. Mere self-sufficiency in domestic production of refined products does not carry us far; the country should, as far as possible, be self-sufficient in the crude oil itself, the basic raw material for this industry. This will depend upon the scope for exploration, the pace of exploration activity and the success resulting therefrom. These are formidable challenges; the intensity of these challenges becomes much more magnified in the context of the paucity of technical know-how and the inadequacy of industrial capacity in the country to build and operate the different facets of the oil industry.

At the commencement of the First Plan, practically the entire demand of the country for petroleum products was met by imports, the output of the Assam Oil Company's Digboi refinery being a little over 5 per cent of the total requirement. The establishment of three refineries in the private sector was accepted as part of the First Plan. Out of the three refineries, two were set up in Bombay—one by the Standard Vacuum Oil Company (now Esso) was commissioned in 1954 and the other by Burmah-Shell in 1955; the third by Caltex was commissioned in 1957 at Visakhapatnam. As a result of these measures the total refining capacity increased to 3.48 million tons, as against

0.35 million tons at the beginning of the First Plan. The country's only oil producing field was in Assam around Digboi. In order to step up petroleum exploration within the country, the Directorate of Oil and Natural Gas was set up in October 1955.

During the Second Plan period, a number of steps were taken to intensify exploration and production of oil within the country. The Directorate of Oil and Natural Gas was elevated to a Department of the Government called the Oil and Natural Gas Commission in August 1956. This was, later on, converted into a statutory commission in 1959. In 1958, the promotion agreement to form a rupee company was signed between the Government of India and the Burmah Oil Company and the Assam Oil Company. This company later came to be known as Oil India Limited and has been entrusted with exploration and production of crude oil in Nahorkatiya, Hugrijan and Moran areas in Assam and the construction of crude pipelines for supplying crude oil to Government refineries at Gauhati and Barauni. Initially, Government of India's share was one-third; this was raised to 50 per cent in 1961. In 1959, Indian Refineries Limited, a company wholly owned by the Government of India, was incorporated and was entrusted with the construction of Gauhati and Barauni refineries. Another company, wholly owned by the Government of India, called Indian Oil Company was also set up in the same year to undertake the marketing and distribution of petroleum products from rupee countries and public sector refineries. The Oil and Natural Gas Commission intensified exploration in several parts of the country—Assam, Gujarat, Uttar Pradesh, Bihar and Punjab. As a result of these efforts, ONGC discovered oil in the Cambay basin in 1958. In its activities ONGC has been assisted by a number of friendly countries like U.S.S.R., Rumania, Italy, France and West Germany. The capacity of the private sector refineries was increased to 6.05 million tonnes at the end of the Second Plan; their present output amounts to 7.75 million tonnes a year.

In 1961, for the first time in the history of Indian oil industry, production of crude oil started outside Assam. It was a modest

beginning with 100 tonnes per day in Gujarat; the rate of production has since been stepped up gradually. At present, crude oil is being supplied to the Bombay refineries at the rate of 2,250 tonnes per day from the Gujarat fields. The public sector refineries have also made sufficient progress. The first public sector refinery, built with the collaboration of the Rumanian Government at Noonamati near Gauhati with an initial refining capacity of 0.75 million tonnes, was commissioned in January 1962. The second public sector refinery at Barauni with an initial capacity of 2 million tonnes is being set up in collaboration with the U.S.S.R. Government. It has been in operation since August 1964 and was formally inaugurated on January 15, 1965. The third public sector refinery with an initial capacity of 2 million tonnes per annum is being established at Koyali near Baroda in Gujarat in collaboration with U.S.S.R. The refinery is likely to go on stream by the end of 1965. It has been decided to expand Barauni and Koyali refineries by one million tonnes each and it is expected that the increased production will be available in 1966. The requirements of Gauhati and Barauni refineries are likely to be met largely from Oil India's and Oil and Natural Gas Commission's oilfields in Assam; the requirements of Koyali refinery will be met by ONGC from the Gujarat fields.

An agreement was signed in April 1963 between the Government of India and Phillips Petroleum Company of U.S.A. for setting up the fourth public sector oil refinery with a capacity of 2.5 million tonnes per annum near Cochin. The refinery, designed to process imported crude, is expected to be completed during 1966.

Steps have been taken to set up refineries in the Fourth Plan period in Madras and Haldia and it is expected that the Madras refinery will be in operation in 1967 and the Haldia one in 1968. The Madras refinery is being set up in collaboration with American International Oil Company and the National Iranian Oil Company.

With a view to bringing about better co-ordination between refineries and marketing activities in the public sector, the Indian

Refineries Limited and Indian Oil Company have been merged to form a new company called Indian Oil Corporation with effect from September 1, 1964. The Marketing Division of the Corporation has developed a net-work of bulk storage facilities at main ports and has constructed storage depots all over the country. IOC entered into collaboration with Mobil Petroleum Company, Limited, to form a new company — Indian Oil Blending Limited — for setting up two lube oil blending plants, one each at Bombay and Calcutta. Both the plants have started working. IOC will also be entering LPG (liquid petroleum gas) distribution market.

In developing an integrated oil policy in the public sector, the Government of India has not merely set up oil refineries in the public sector and made arrangements for marketing their products but has also undertaken the construction of product pipelines within the country. The product pipeline connecting the refineries at Noonamati and Gauhati and Siliguri in West Bengal has been commissioned by the Indian Oil Corporation in December 1964. Other pipelines for the transportation of crude oil as well as refined products to connect Haldia and Barauni, Kanpur and Barauni and Gujarat oilfields with power stations and other consuming centres are at various stages of completion. The Petroleum Pipelines (Acquisition of Right of User in Land) Act, 1962 facilitates speedy acquisition of "right of way" for laying the pipelines.

Notwithstanding new discoveries of oil reserves, crude oil has to be imported for use in the coastal refineries in addition to certain refined products to meet the increasing demand in the country. The imports of crude and refined products during 1963 amounted to 9.37 million tonnes. India also exports certain petroleum products like light distillates and paraffin wax. The export earnings during 1963 totalled Rs. 5.5 crores.

The Oil and Natural Gas Commission, in collaboration with AGIP (a subsidiary unit of ENI of Italy) and Phillips Petroleum Company of U.S.A., had offered a joint bid for exploration in the offshore area in the Persian Gulf. The Iranian authorities

have accepted the bid. ONGC will be an equal partner with AGIP and Phillips in the oil exploration in Iran.

Coal and Lignite

Coal mining was first started at Raniganj, Bengal, in 1814. The construction of railways gave the industry a great impetus and a number of joint stock companies, mostly European owned and managed, came into the field. The production of coal showed rapid increases after 1868.

The target of coal production at the end of the Second Plan was 600 lakh tons. Of the additional output of 220 lakh tons, 100 lakh tons were allotted to the private sector and 120 lakh tons to the public sector. Out of 120 lakh tons allotted to the public sector, 105 lakh tons went to the National Coal Development Corporation Limited, a Central Government company set up in October 1958, and 15 lakh tons to the Singerani Collieries Company Limited, in which the Central Government and the Government of Andhra Pradesh are collaborating.

Production during 1963-64 was 651.3 lakh tonnes of which 526.5 lakh tonnes was produced in the private sector. Production in 1964-65 is expected to be of the order of 626.0 lakh tonnes. In 1965-66, however, the production is expected to be higher.

According to present thinking, it is proposed to provide for a production programme of 1,250 lakh tonnes during the last year of the Fourth Plan (*i.e.* 1970-71). It has been assessed hat an investment of about Rs. 450 crores (including foreign exchange component of Rs. 150 crores) would be required for the above coal programme.

For the supply of coking coal to the Bhilai and Rourkela steel plants, a coal washing plant, costing about Rs. 2.46 crores and having an annual capacity of 16 lakh tons of washed coal, was set up at Kargil, District Hazaribagh, Bihar in November 1958. This plant is under the National Coal Development Corporation. It produced 12.7 lakh tonnes of washed coal in 1963 compared to 10.6 lakh tonnes in 1962.

The integrated Neyveli Lignite Project envisages the mining of 35.6 lakh tonnes of lignite per annum to be utilised as follows :

15.2 lakh tonnes	2,50,000 kw of thermal power.
5.2 lakh tonnes	1,54,000 tonnes of urea to be utilised as chemical fertilizer.
15.2 lakh tonnes	3,86,000 tonnes of carbonised briquettes for use as domestic and industrial fuel.

Preliminary work has since been started to expand the project. Lignite production is proposed to be raised to 63 lakh tonnes in the Third Plan and thermal power to 4 lakh kw and later to 6 lakh kw.

The lignite bed was exposed in August 1961 after removing 180 feet of over burden. Up to the end of November 1964, 26 lakh tonnes of lignite had been mined. The full production of 35.6 lakh tonnes is expected to be achieved in early 1966, when the consuming units would be in operation.

The Neyveli thermal power station is being set up under the Indo-Soviet 500-million rouble credit agreement of November 1957. The first unit of the power station was commissioned in June 1962 and the second, third and fourth in January, July and October 1963, respectively. The fifth unit was commissioned in April 1964. The fertilizer plant is expected to commence production in early 1966 and the briquetting and carbonization plant by the end of 1965 or early in 1966. A clay washing plant at Neyveli was commissioned in December 1961. With an annual capacity of 6,000 tonnes, the plant had produced over 7,000 tonnes of washed clay up to the end of November 1964.

In 1962, nearly 6,84,000 persons were engaged in mining (including coal mining) and there were 3,200 working mines, excluding minor minerals and minerals prescribed under the Atomic Energy Act, 1948. In India concessions for all minerals, except petroleum and natural gas, are granted in accordance with the provisions of the Mines and Minerals (Regulation and Development) Act, 1957. The more important mining centres are in Bihar, Orissa, West Bengal, Madhya Pradesh, Rajasthan, Mysore and Andhra Pradesh and the more extensively worked minerals are coal (854 collieries), mica (718 mines), manganese

ore (551 mines), iron ore (284 mines), gypsum (39 mines), and limestone (155 mines), and bauxite (46 mines).

The value of mineral production in India during 1963 was Rs. 212 crores as against Rs. 205 crores in 1962, and Rs. 176 crores in 1961.

The quantity index of mineral production in 1962 stood at 115.4 (base 1956=100) compared to 105.7 in 1961. The output and value of the principal minerals is shown below:

	Unit of quantity	1963 Quantity	1963 Value (in thousand rupees)
Coal	Thousand tonnes	6,59,27	155,12,09
Metallic Minerals			
(i) Ferrous			
Chromite	Tonne	64,790	41,07
Iron ore	Thousand tonnes	1,49,26	11,35,34
Manganese ore	Thousand tonnes	10,75	5,61,16
(ii) Non-ferrous			
Bauxite	Thousand tonnes	5,65	54,20
Copper ore	Thousand tonnes	4,74	2,21,29
Gold	Kilogram	4,305	5,05,84
Limenite	Thousand tonnes	26	14,14
Lead (concentrate)	Tonnes	5,920	21,56
Rutile	Tonnes	1,871	18,42
Silver	Kilogram	3,991	9,14
Zinc (concentrates)	Tonnes	10,627	29,34
Non-metallic Minerals			
Apatite	Tonnes	13,127	3,62
Corundum	Tonnes	658	3,26
Diamond	Carat	1,432	5,18
Dolomite	Thousand tonnes	10,70	1,26,33
Fireclay	Thousand tonnes	3,68	28,83
Gypsum	Thousand tonnes	11,88	72,32
Kyanite	Tonnes	31,665	62,24
Limestone	Thousand tons	1,70,57	92,18
Magnesite	Tonnes	2,34,566	41,44
Mica (crude)	Tonnes	25,098	2,44,98
Salt (rock)	Tonnes	3,400	2,47
Salt (other than rock)	Thousand tonnes	45,35	11,95,08
Sillimanite	Tonnes	11,285	4,99
Steatite	Tonnes	1,17,974	39,15

Cotton Textiles

The cotton textile industry, which is a little over 100 years old, is today one of the premier industries of India. Its significance is two-fold. Besides providing employment at present to about a million people, it is a major exporting industry.

The industry has acquired its present position after decades of hard struggle. Though World War I gave considerable stimulus to this industry, during the years between World Wars I and II, it was subject to trade depressions and foreign competition. The *Swadeshi* movement helped the industry to make some progress, but it was World War II that imparted strength to the industry.

Before the War, India had 388 cotton mills with about one crore spindles and two lakh looms. Despite the partition of India in 1947, the number of mills as also of spindles has been rising steadily.

At the beginning of 1960, there were 479 cotton textile (186 spinning and 293 composite) mills in India, with 135.5 lakh spindles and about 2.04 lakh looms. Nearly Rs. 122 crores were invested in the industry which employed about 9.76 lakh workers. The number of mills increased to 537 (246 spinning and 291 composite) in 1964.

The Government have been carrying out, since 1955, a survey of the industry both from the technical and financial points of view to find out the requirements of modern equipment and machinery. The assistance of the National Industrial Development Corporation to the industry is based on these data.

Mill cloth output in 1964 is estimated at 46.56 crore metres; yarn output was 96 crore kilogrammes.

Jute

The jute industry in India is a little over a century old. There are in all 112 mills in the country with a total capacity of over one lakh tonnes of jute goods a month per shift. The industry has 72,281 looms representing about 53 per cent of the total loomage of the world. The total value of jute goods produced

in a year is about Rs. 170 crores. The production of jute goods touched a new high at 13.54 lakh tonnes in 1963-64, exceeding the Third Plan target of 13 lakh tonnes.

The industry employs about 2.35 lakh workers and indirectly provides work for a large number of intermediaries. Raw jute produced in the Eastern States gives livelihood to nearly two million agriculturist families. As the biggest earner of foreign exchange, particularly dollars, for India, the jute industry occupies an important place in the country's economy.

The partition of India in 1947 deprived the industry of large jute growing areas. This had an adverse effect not only on supplies of raw jute but also on the quality of the fibre and cost of produciton. However, as a result of the encouragement given to jute growers in the country, almost the entire raw material requirements of mills are now being met from within the country as against one-fourth at the time of partition.

To encourage modernisation, licences for the import of machinery have been liberally granted to the jute mills and a start made in the manufacture of jute mill machinery in the country. Loans are also being offered through the National Industrial Development Corporation for modernisation of equipment; loans over Rs. 7 crores have been approved so far. About 84 per cent of the loom spinning capacity is now fed by shiver spun yarn.

The Indian jute mills have recently been paying greater attention to diversifying production. Some of the specialities which are manufactured now are cotton bagging (a loose fabric meant for packing of raw cotton in the U.S.A.), wide hessian used as carpet backing in the U.S.A., jute tarpauline, paper-lined hessian, polythene-lined bags, jute carpets, jute webbing, etc. These fetch much better prices than the ordinary varieties of hessian and sacking.

Woollen Textiles

Although the beginning of wool industry in India on an organised basis goes back to 1876, the major expansion took place only after 1948. According to the 1954 Census of Manu-

facturing Industries, there were 61 factories of woollen textiles in the country. The installed capacity in the woollen industry is about 50,000 woollen spindles, 141,000 worstted spindles and 16.000 shoddy spindles.

In recent years, the quality of production has shown considerable improvement and the range of goods manufactured has widened. The production of woollen, worsted and shoddy yarn was 22.7 million kgs. in 1963 and 20.1 million kgs. in 1964.

A development council for the woollen industry has been set up which has been encouraging the export of woollen fabrics. An Export Promotion Committee has also been formed. The main items exported at present are raw wool, carpets, druggets and some quantities of woollen/worsted fabrics. Foreign demand is on the increase.

Art Silk

The art silk industry in India is of comparatively recent growth. During and after World War II, it expanded rapidly.

The total installed capacity for the manufacture of art silk yarn is about 43.3 million lbs. a year. It is proposed to increase this to about 100 million lbs. and thus meet the total demand of the industry by the end of the Plan period.

The dull variety of viscose rayon yarn was produced for the first time in 1955. The acetate variety of rayon yarn is also produced now in both bright and dull qualities. During 1962, a total of about 60 million lbs. of viscose and acetate yarn was produced in the country.

Cement

On the eve of partition, the country had 23 cement factories with an installed capacity of 2.7 million tons and actual production of about 1.5 million tons. Since then, the industry has been steadily forging ahead. At the beginning of 1964-65, there were 37 factories in the country with an installed capacity of about 10.5 million tonnes. The installed capacity at the end of 1964-65 is expected to go up to 11.25 million tonnes. The production of cement is expected to rise from 9.4 million tonnes

in 1963-64 to 9.6 million tonnes in 1964-65. The capacity of asbestos cement products industry has reached about 3.4 lakh tonnes a year.

Paper and Paper Board

The production of machine-made paper in India dates back to 1870. However, the industry has made rapid progress only since 1950. The production of paper rose from 1.09 lakh tonnes in 1950 to about 5 lakh tonnes in 1964.

Almost all varieties of paper are now manufactured within the country. Among the new products being manufactured are coated boards, art and chrome paper, cigarette tissues, sensitised cheque paper, high gloss poster paper, bond paper, bank paper, off-set paper, cellulose film, etc. The production of transparent paper has also increased appreciably. It has been possible to develop an export market in regard to cigarette paper. Important items like coated art paper and press-patin paper, as also vulcanised fibre sheets, vulcanised fire rods and tubes, seamless cards and silver cans have been taken up for manufacture.

The first newsprint mill in India, the National Newsprint and Paper Mills Limited, Nepanagar, Madhya Pradesh, started as a private venture in 1947 and the responsibility for its management was taken over by the Madhya Pradesh Government in 1948. After its reorganisation in 1958, the Government of India and the Government of Madhya Pradesh now hold shares of Rs. 2.55 crores and Rs. 1.70 crores, respectively. Total authorised and issued capital is Rs. 5 crores. The mill went into production in January 1955. It has an installed capacity of 30,000 tonnes, which is proposed to be increased to 75,000 tonnes. Output during the last few years has increased from 3,455 tonnes in 1955-56 to 23,398 tonnes in 1960-61 and 25,279 tonnes during 1961-62. The 1962-63 production amounted to 26,515 tonnes, while the 1963-64 output was a little more than the rated capacity of 30,000 tonnes.

Plastics

Before World War II, the plastic industry hardly existed in India. In recent years, plastics have found extensive use as

basic industrial and construction material. The industry is also closely linked with the development of basic chemicals in the country.

The plastic industry is growing satisfactorily. The number of principal manufacturing units has risen from 40 in 1947 to about 130 now. Most of these are operating on modern lines. The articles manufactured cover a wide range of household consumer and utility items, electrical accessories, etc. The quality compares favourably with that of goods produced in other countries.

Considerable progress has been made in the moulding branch of the industry. Manufacture of intricate moulds has been taken up. Significant increase in the production of compression and injection moulded goods has also been registered. In addition the manufacture of plastic coated cables, wires and flexibles, leather cloth, polyethylene films used as moisture-proof and heatsealable packing material, lay flat tubings and long-playing phonograph records has been undertaken by various firms.

The main difficulty of the plastic industry so far was its dependence on imported raw materials. Indigenous production of some important raw materials like polystyrene and urea formaldehyde moulding powder has now commenced. The manufacture of polyethylene has also been undertaken.

Ceramics

Production of ceramics has been on the increase, particularly in the fields of sanitaryware high tension insulators and crockery. The Government Porcelain Factory at Bangalore has made satisfactory progress in the production of high tension insulators. The manufacture of dental porcelain has been taken up commercially in India.

Glass

The first glass factory in India was set up as early as 1870, but the industry had to struggle hard before it could establish itself firmly.

There are about 150 glass factories with an installed capacity of over 4 lakh tonnes. In addition, there are a large number of small units working on a cottage scale and manufacturing mainly bangles and beads.

Among some of the items being manufactured in the country are penicillin vials, sheet glass of less than 16 oz. and over 32 oz., glass tubing by automatic drawing, narrow-mouth thermos flasks and decorated aerated water bottles. An optical glass project is being set up in the public sector with the collaboration of the Government of U.S.S.R.

Good progress has also been made in improving the quality of the glass and glassware. Particular mention should be made of aerated water bottles, ink phials, etc., in which the quality has improved considerably. The sheet glass manufactured at Asansol is claimed to be superior in quality to that imported.

The annual demand for glass and glassware is estimated at about 2 lakh tonnes. Some of the new items manufactured are safety glass, toughened glass, glass wool, mineral wool and allied products.

Leather

The leather and leather goods industries figure well in India's foreign trade. India has the largest head of cattle in the world, and is an exporter of skins and leather.

As a result of partition, some of the main centres of supply of raw hides went to Pakistan, while most of the tanneries were in India. This adversely affected the supply position of hides to the tanning industry. The industry has, however, established export markets for its products in the United Kingdom, the United States and Pakistan. Besides hides and skins, a large quantity of raw skins, mostly goat skins are exported to Europe and the United States.

The principal articles of manufacture are footwear, travel and fancy goods and industrial products like belting, pickers, picking bands and roller skins. The largest quantity of leather is utilized for the manufacture of the footwear. Among the by-products, the glue industry of a considerable size has already

been established in the country. India is nearly self-sufficient in its requirements of glue.

Considerable financial assistance has been sanctioned for starting flaying centres, training-*cum*-production centres and village model tanneries and demonstration parties, besides introducing improved tools and techniques. A number of improved tanning processes have been developed for the manufacture of shoe uppers, picking bands, upholstery leather and fancy leather.

The leather and leather goods industries are faced with the problems of shortage of raw hides in the country, marketing of tanned hides and skins, standardisation of goods meant for export, etc. Steps are being taken to meet these problems.

Rubber Goods

The rubber goods industry is of comparatively recent origin. Before World War II, India was an exporter of raw rubber and importer of manufactured rubber goods. Since then, however, a sizable manufacturing industry has developed in the country and export of raw rubber has ceased. At the present time, nearly all varieties of rubber goods are produced in the country. During recent years, it has also been possible to develop export markets for rubber manufactures.

There are at present 81 organised units engaged in the manufacture of rubber goods such as automobile tyres and tubes, car tyres, rubber footwear, industrial V belts, fan belts, dipped rubber goods, soft sponge rubber, rubberized fabrics, etc. The existing capacity of automobile tyres and bicycle tyres is 42 lakh numbers each per year.

The production of rubber footwear is also progressing satisfactorily. Over a million pairs are being produced annually.

Some of the items which have been taken up for manufacture in recent years are earth-mover and excavator tyres and tubes, foam cushions, hard rubber combs, spray hoses, off-the-road tyres and tubes, sectional air and steam bags and rubber components for automobiles and radio sets. Particularly significant is the rapid increase in the production of tractor and aero tyres and tubes. The tyre units are taking up the manufacture of

those sizes which were not being manufactured in India previously.

Among the new items under manufacture are black tape, rubber tape and vinyl tape, surgical gloves and microporous rubber separators.

A unit with an annual capacity of 30,000 tonnes for SBR synthetic rubber is actually in commercial production. There would, however, soon be need to set up a capacity to the extent of about 70,000 tonnes per year for new types of synthetic rubber *viz.*, cis-poly-butadiene and cis-poly-isoprene rubber; and 20,000 tonnes per year for butyl rubber. Carbon black which was produced on trial basis in 1962 is now being manufactured on a commercial scale.

Sugar

The Indian sugar industry is reckoned to be one of the biggest in the world and the second largest in the country, next only to cotton textiles. The industry is, therefore, of great importance to the country.

There has been a steady increase in the production of sugar in the last ten years. From 10.40 lakh tonnes in 1950 the production rose to 19 lakh tonnes in 1956. There were 175 mills in 1960-61, and the production was 30.29 lakh tonnes. The 1962-63 output was lower at 21.52 lakh tonnes, largely because of a poor sugarcane crop. Internal consumption of 24.88 lakh tons in 1962-63 was nearly a lakh tonnes less than in 1961-62. Export, however, was highest at 4.79 lakh tonnes in 1963 as compared to 3.73 lakh tonnes in 1962. Production target for 1963-64 was laid down at 33 lakh tonnes.

Sports Goods

The sports goods industry is essentially a post-partition industry. At present, it is largely concentrated in the northern region of the country, especially at Jullundur and Meerut. The other centres are Calcutta, Bombay, Madras and Bhopal.

Apart from meeting the requirements of the country to a considerable extent, the industry exports a substantial portion of

its products to Malaysia, Ceylon, Burma, Indonesia, Thailand, Iraq, Iran, Afghanistan, Africa, Canada, the U.K. and the U.S.A. Indian manufactured cricket and other balls, hockey sticks, nets and shuttlecocks are competing well in foreign markets.

In order to maintain a standard quality of products, standard specifications for different varieties of sports goods have been laid down. Certification marked goods are now available in the market at reasonable prices.

The industry has substantial scope for further development. It is estimated that the internal demand has been increasing at the rate of 20 per cent a year. During the next few years, the demand is expected to increase considerably as a result of the introduction of compulsory games in schools and colleges, the opening of new educational institutions, the expansion of sports activities in the community project areas and national extension service blocks and the organization of test matches and international sports and tournaments.

CHAPTER VII

SMALL-SCALE AND VILLAGE INDUSTRIES

Small-scale and village industries have always been a prominent feature of India's economy. In the past, these industries flourished and provided employment to a large number of people. With the growth of modern large-scale industries, many of them declined and some fell into decay. Nevertheless, in spite of considerable large-scale industrialization, India remains mainly a country of small scale production. It is estimated that at present about two crore persons are engaged in cottage industries. The handloom industry alone employs 50 lakh persons, or nearly as many as are employed in all other organized industries, including large-scale industries, mines and plantations. With expanding electrification, their importance will increase further.

Village industries are concerned, in the main, with the processing of local raw materials for local markets and with simple techniques. The scope for such industries depends partly on their relation to the corresponding large-scale industry and partly on the development of agriculture and the growth of rural amenities.

Small-scale industries can be divided into three groups, namely :

(1) Those in which small-scale production has certain advantages and are not affected by large-scale industry to any great extent. Among the examples of industries in this group are the manufacture of glass bangles, footwear, agricultural implements, wooden furniture, artwares, etc. and radio and transistor assembly.

(2) Those in which small-scale industry is concerned with the manufacture of certain parts or with certain stages

of production in a manufacturing process in which the predominant role is that of large-scale industry. Some leading examples of this type are the manufacture of automobile, aircraft and railway parts, electrical goods, agricultural implements, etc.

(3) Those in which small-scale industry has to meet the competition of the corresponding large-scale industry. The best example in this group is the handloom industry.

For their progress, village and small-scale industries need (a) adequate marketing facilities, (b) technical assistance, (c) financial assistance, and (d) assistance in proper location. The primary object of developing small industries is to extend work opportunities, raise incomes and the standard of living and to bring about a more balanced and integrated rural economy. These industries are not to be viewed as a static part of the economy. They are to develop as a progressive and efficient decentralized sector which is closely integrated with agriculture on the one hand and with large-scale industry on the other.

The work of organising these small industries is primarily the responsibility of the State Governments. To supplement their effort the Central Government have set up the following bodies : the All-India Khadi and Village Industries Commission; the All-India Handicrafts Board; the All-India Handloom Board; the Small-scale Industries Board; the Coir Board; and the Central Silk Board.

The Small-scale Industries Board is an advisory body. The various developmental programmes for small-scale industries are executed by the Office of the Development Commissioner (Small-scale Industries).

Financial assistance to small industries is given both by the Government and banking institutions. Recently, measures were taken to make this assistance more effective. Amount spent in 1961-62 and 1962-63 was Rs. 15.10 crores on block loans and other State Government schemes. Sanction was given till March 1964 for the establishment of 291 industrial estates, which seek to remove small industrial units from congested urban areas

and provide them at the new sites with suitable factory space and common facilities for efficient working and to assist in the disposal of industries. During the Third Plan, a provision of Rs. 114.83 crores has been made for development of small-scale industries of which Rs. 30.21 crores is for industrial estates. One hundred estates were functioning at the end of December 1963, and 41 more had been completed. The entire cost of starting these estates is advanced as loans by the Centre to the State Governments. Rs. 29.68 crores had been spent on the development of the industrial estates during 1963-64.

A programme of technical assistance to small industries, known as the Industrial Extension Service, has been undertaken directly by the Central Government. Sixteen Small Industries Service Institutes (one for each State including one in Delhi) and 5 branch institutes including one in Goa and 65 Industrial Extension Centres and Production Centres are working. These offer technical facilities to various trades. Experts are also brought in from abroad to help industries in technical matters and Indian technicians are sent for training abroad.

Another significant development was the establishment of the National Small Industries Corporation in February 1955. Its Marketing Division has established liaison with Government purchase departments and has evolved a workable arrangement for giving contracts to small units. Contracts secured by small-scale industries from DGS&D and Railways, under this scheme, totalled Rs. 70.9 crores and Rs. 4.5 crores respectively till May 1964. The Corporation has also been guaranteeing, since January 1959, credits to these small units engaged by the State Bank of India for execution of orders. The Corporation has introduced a scheme for hire-purchase of machinery and equipment needed by small units; machinery worth Rs. 45 crores has been delivered under the schemes to small units so far. The terms and conditions have been liberalised but from August 1960 a service charge of 6 per cent of the value of the machines has been introduced. Decentralisation was achieved through four subsidiary corporations set up in 1957 at Bombay, Calcutta, Madras and Delhi. The activities of the Corporation, which

also helps in the setting up of small industrial units as ancillary to large ones, are financed by loans and grants by the Central Government. The Corporation entered export market of shoes towards end of 1956 and has shipped shoes valued at Rs. 4 crores so far. It has also set up three Prototype-*cum*-Training Centres at Rajkot, Okhla and Howrah where besides developing prototypes for commercial exploitation, common facilities and training is also provided to small entrepreneurs.

The All-India Handicrafts Board was set up in 1952 to improve production and marketing of handicrafts in India and abroad. The Board is running pilot centres — 4 for training, 3 for training-*cum*-production, 3 for research experimentation, 5 for revival of traditional crafts and 4 for experimentation and production. About 150 cottage industries emporia have been set up all over the country. Rupees 5 lakhs have been allocated in the Third Plan to finance artisans and their cooperatives through the emporia. A number of economic surveys of various regional handicraft industries have been carried out. The services of foreign experts are utilised from time to time for seeking advice on different aspects of the industry. The Indian Handicrafts Development Corporation was set up in April 1958 to take over some of the functions of the Board in respect of export promotion. Schemes for inspection of various handicrafts for quality control have been finalised. Mobile exhibition units have been sent round the country and funds allocated for the exhibition of metalware, bambooware, etc. 'Handicraft weeks' are held from time to time in different States. Publicity is given to Indian handicrafts at various international fairs. Production of handicrafts has gone up and is now estimated at about Rs. 100 crores annually. Exports amount to nearly Rs. 7 crores a year.

The coir industry is mainly carried out on a cottage basis, though some factories employ wooden looms worked by manual labour. Of an estimated annual production of 1,42,000 tonnes of coir yarn, more than 90 per cent is produced in Kerala. Almost the entire production of about 21,000 tonnes of manufactured articles comes from that State.

On an average, about 50,000 tonnes of coir yarn and 21,000

tonnes of coir products are exported. The Coir Board is engaged in popularising and promoting coir products in India and abroad. The Third Plan provides for Rs. 3 crores (Rs. 75 lakhs for Central and Rs. 2.25 crores for State schemes) for research and marketing. Emphasis in the Third Plan has been laid on improving the quality of production, developing new lines of production and stepping up of exports. A research institute at Kalavoor, near Alleppey (Kerala), and a regional research station at Uluberia in Howrah district (W. Bengal) have been set up. The institute at Kalavoor started functioning in April 1958.

In 1960, the production of raw silk in India (mulberry and non-mulberry) amounted to 15 lakh kgs. Nearly half the quantity is produced in Mysore State followed (in order of importance) by the States of West Bengal, Assam, Jammu and Kashmir, Madhya Pradesh and Bihar. The Central Silk Board, established in 1949, looks after the promotion of sericulture and silk industry. The Central Sericultural Research Station, Berhampore (West Bengal), was established in 1943. It has a sub-station at Kalimpong (West Bengal). The station is Centrally-administered and conducts research in improved methods of production, better and disease-free mulberry leaves and seeds. The station is being expanded on modern lines. The Board has set up an All-India Sericultural Training Institute at Mysore and a Central Foreign-Race Seed Station at Srinagar. An eminent geneticist from Japan conducted a survey of the problems of research in Indian sericulture in 1957. The services of two other sericulture experts have since been obtained from Japan under the Colombo Plan for a period of one year.

During the First and Second Plan periods, Rs. 218 crores (Rs. 175 crores during Second Plan) were spent by the Government for the development of the village and small industries. Rs. 264 crores have been provided in the Third Plan for the purpose (about Rs. 141 crores for the schemes of the States and Union Territories and the rest for Central Government schemes and programmes).

A Ford Foundation team of experts on small industries

visited India in 1963-64 to advise the Government regarding the lines on which further development might take place.

Khadi Industry

Financial assistance to the khadi industry is given by the All-India Khadi and Village Industries Commission through co-operative societies, registered institutions, State Governments and the statutory boards set up by the State Governments. To encourage the production of khadi, different rates of rebates are allowed to the consumers and producers. This has led to a significant improvement in the production and sale of Khadi, as the following figures will indicate :

Production and Sale of Khadi

(in lakhs of rupees)

Year	Value of production	Value of sale
1952-53	1,94	1,95
1955-56	4,79	4,26
1959-60	14,14	10,60

For 1963-64, the production of khadi of all varieties amounted to 718.96 lakh square metres and sales to Rs. 22.46 crores.

Ambar Charkha

A four-spindle manually operated charkha, known as Ambar charkha, was evolved in 1956 and a programme for the manufacture and distribution of these Ambar charkhas, and for the training of instructors, carpenters, spinners and others was introduced in 1956-57. About half a million Ambar charkhas have been introduced.

CHAPTER VIII

INDUSTRIAL COOPERATIVES

The development of industries on a cooperative basis has been given a significant place in the Plan programmes. This aspect has been emphasised in the Industrial Policy Resolutions of the Government of India and has also been mentioned in the Directive Principles of the Constitution.

There were 7,101 industrial cooperatives in 1951; the number was nearly doubled within a period of five years and stood at 13,272 in 1956. Within another five years *i.e.* by 1961, the number rose to 33,256 with 25.57 lakh members and Rs. 49.48 crores as working capital.

Industrial cooperatives cover both the production types of societies and those that provide only services to their members. There are a number of cooperatives of spinning mills as well as cooperative industrial estates. Ten industrial cooperative banks have also been set up with a working capital of Rs. 4.32 crores.

At the end of the Second Plan, there were 11,947 handloom weavers' cooperatives, 855 khadi cooperatives, 11,346 village industries cooperatives, 1,948 handicrafts cooperatives, 446 coir cooperatives, 81 sericultural cooperatives, 33 salt cooperatives and 6,579 cooperatives in small-scale and other industries.

It has been estimated that by the end of the Third Plan there will be 48,000 industrial cooperatives with a membership of 40 lakhs and a working capital of Rs. 120 crores.

Technical guidance is provided to industrial cooperatives by officers of the Directorates of Industries in the various State Governments, by the Khadi and Village Industries Commission and the Small Industries Service Institutes established in every State under the Central Small Industries Organisation. Apart

from this, various other organisations are doing research in methods of production, tools and implements, etc., and radiate scientific knowledge to the societies and industrial units.

Special training facilities are being provided by the Government of India to train officers connected with the development of industrial cooperatives and those actually in the field such as directors and members of the managing committees, managers and secretaries of industrial cooperatives, officers in financing institutions, etc.

FINANCING

Financing has been a great problem for industrial cooperatives which have so far been getting a substantial part of their requirements from the Government under the State Aid to Industries Act. Working capital loans under this Act are advanced to cooperatives of various types, except those for handlooms, at 2½ per cent per annum rate of interest. Cooperatives in the handloom sector get their requirements of finance from the Reserve Bank of India at 3 per cent per annum through the Central Cooperative Banks under a scheme started in 1957. Apart from this, Government has taken other steps to encourage the financing of industrial cooperatives. Industrial cooperative societies requiring amounts above Rs. 10 lakhs for financing their long-term operations can avail of the facilities offered by the Industrial Finance Corporation of India. Another source from which the societies receive financial assistance is the National Small Industries Corporation which supplies machines on a hire-purchase basis.

Apart from the working capital loans mentioned above, State Governments help industrial cooperatives to strengthen their share capital base by advancing money to the members to purchase further shares in the societies. These loans are repayable in easy instalments through monthly contributions deducted from the earnings of the members.

Cooperatives are also given loans and subsidies for the construction of godowns. A cooperative gets a subsidy of 25 per cent

for the construction of a godown, while the remaining 75 per cent is given as a loan repayable in 15 years.

Supervisory and management expenses of the industrial co-operatives other than handloom cooperatives are also subsidized by the Government under certain conditions.

Quotas of controlled raw materials like iron and steel, cement, and non-ferrous metal are allotted to industrial cooperative societies by the Industries Departments from out of the quota for small-scale industries.

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